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14. ABSTRACT Breast cancer is the second leading cancer death in women in the United States. Mammography screening can reduce this breast cancer burden, but even with the barrier of insurance removed, it is underutilized by minority and low-income women. Objective: Identify influences leading 25% of minority and low-income women to adhere to mammography screening guidelines. Design: Personal interviews and telephone surveys on mammography knowledge, attitudes and behavior. Participants: Women members of a Tennessee managed care organization with incomes less than 200% above poverty and at least 40 years old. Results: Personal factors overcoming barriers: knowledge of risk factors; knowledge and trust in early detection and treatments; personal responsibility about own health; pride and satisfaction with one's own actions. Compliant women recognized symptoms of breast cancer, the health system's ability to cure it, and the importance of early detection in survival and they knew others with breast cancer. Family, friends, and convenient location were major factors in compliance. Most cooperate with their physicians. Compliant women know of community healthcare services, women with breast cancer, the importance of early detection, and proactive health behaviors. Conclusion: The project identified profiles of underserved women who are or are not adherent to repeat mammography screening guidelines.					
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Table of Contents

Cover.....	1
SF 298.....	2
Table of Contents.....	3
Introduction.....	4
Statement of Work table.....	5
Body.....	7
Key Research Accomplishments/Reportable outcomes.....	15
Supported Personnel.....	16
Obstacles in Accomplishing Stated Work on Time.....	16
References.....	18
Appendix A (Publications).....	19
Appendix B (Pilot Survey).....	
Appendix C (Final Survey).....	
Appendix D (Curriculum Vitae).....	

INTRODUCTION

Breast cancer is the second leading cause of cancer deaths in all women (1). One in every eight women in the United States will develop breast cancer (2). Breast cancer mortality can be reduced by up to 50% through regular screening and early detection by mammography (3). Unfortunately, despite numerous research and intervention efforts, mammography usage is still underutilized by all groups of eligible women (4). Low income, minority and elderly groups underutilized mammography most often (5). Interventions to improve the rates of mammography have varying degrees of success. Many interventions are unsuccessful because they fail to address the real needs of target groups, especially underserved populations (6). Studies suggest that lack of insurance is the most common objective barrier to mammography screening behavior. Recently, changes in health care insurance options have effectively removed the objective barrier of lack of insurance. Still, a vast majority of women in the recommended age bracket are not seeking or obtaining free mammograms. However, many (30%) women with socio-cultural backgrounds and situations comparable to the non-compliant group have indeed obtained their mammograms. *The purpose* of this research is to study these underserved compliant women who could provide clear insight regarding what triggered their behavior change. Previously, numerous studies (6-9) explored and documented why target groups failed to perform healthy behaviors. Very little attention has been paid to how, despite all barriers, some women are still successful in getting a mammogram. *A novel approach* is to focus on what empowers these women to be successful. Our study would identify the specific driving forces that facilitate compliant women to seek breast cancer screening. We believe that this research will *discover the keys to success* in screening behavior among the underserved women. The *identified key factors* of these successful underserved women should *be replicable* in their non-compliant counterparts.

Table 1. Description of the Activities Accomplished

Statement of Work (SOW)	SOW Timeline	Accomplished within allocated timeline?	Actual Timeline	Obstacles
Planning and meeting with all investigators and consultant	Month 1-6	Yes	Month 1-6	None
Hire and train staff	Month 1-6	Yes	Month 1-6	None
Meeting with MCO administrators: workout data exchange and other policies	Month 1-6	Yes	Month 1-6	None
Identify study population and select randomized sample of the subjects	Month 1-6	Partial—The Study population was identified	Month 13	Due to a delay in receipt of the claims data it was not possible to randomize the sample of subjects. Completed prior to pilot survey.
Select focus group members	Month 7-12	Yes	Month 7-12	None
Conduct five focus group in-depth discussions	Month 7-12	Yes	Month 7-12	None
Analyze focus group information using qualitative analysis software	Month 7-12	Yes	Month 7-12	Analysis done.
Prepare semi-structured guide questionnaire	Month 7-12	Yes	Month 7-12	None
Preparation of the article from focus group discussions	Month 13-17	One article is published (see Appendix A)	Month 13-17	None
Prepare semi-structured guide questionnaire	Month 13-17	Yes (see Appendix B)	Month 13-17	None
Conduct pilot survey on a random sample of 90	Month 18-21	Completed with five unable to be reached	Month 21-25	DoD IRB approval delayed; lack of availability of survey participants; partner agency out of business and survey activities stopped
Analyze data gathered from the semi-structured questionnaire	Month 18-21	Completed	Month 26-30	None
Prepare questionnaire for	Month 22-	Completed	Month 31-	Research Assistant resigned.

final survey	33		34	Workload redistributed.
Finalize questionnaire after experts' review	Month 33-38	Completed	Month 34-44	Four months for college approval to hire new Research Assistant. Interviews and hiring completed by month 40. RA probationary period and 3 month learning-curve completed before completion of questionnaire.
Program questionnaire into CATI system for telephone interview.	Month 38-42	Completed	Month 45-47	Initial consultant unable to fulfill obligation. Transferred responsibility to contracting agency requiring postponement of programming until contract drawn.
Write papers based on gathered information.	Month 43-48	Two more published (Appendix A)	Month 35-52	Timeframe adjusted to make use of RA (above) training period. Scope of journal submissions expanded.
Establish policies and contract with survey administering agency	Month 43-45	Completed	Month 45-47	Negotiations delayed due to prior obligations of agency as well as agency director change.
Receive HIPAA training for staff	Month 47	Completed	Month 47	None
Update subject list	Month 48	Completed	Month 48	Updated subject list and submitted to survey agency.
Conduct survey	Month 49-54	Completed	Month 49-57	Subject list returned a 40% bad number rate. Extended survey three months to compensate for difficulty in contacting population base.
Clean data and begin analysis	Month 49-54	Completed	Month 57-73	Change due to extension of data collection and reassignment of PI duties

BODY OF THE REPORT

This section describes the project's statement of work progress.
Table 1 summarizes the activities.

1. Months 1-6

1.1. Planning and meeting with all investigators and consultants

Meetings were held with all study investigators and consultants during October 1999. The purpose and scope of the study was reviewed and the specific goal of the meetings was to provide the Principal Investigator an opportunity to gather feedback regarding the research design, questionnaire development and overall study implementation. Those in attendance were as follows: From Meharry Medical College: Dr. Jane Fort, Social and Behavioral Psychologist, Dr. Fred Ernst, Professor and Director of Research, Department of Family and Preventive Medicine, Dr. Ron Asta Assistant Professor in Behavioral Science. Professor Ernst and Dr. Ron Asta are both Behavioral and Clinical Psychologists. From Vanderbilt University, Dr. David Schlundt, project consultant, is Associate Professor with expertise in Analytical Psychology also participated in the discussions. Newly hired Ms. Tonya Micah, Program Coordinator, was also a part of these discussions.

During the meetings, the concept of the study was introduced and the best approach to the research design was explored. Specifically, meeting attendees were asked, based upon the research design, to make recommendations that would identify potential health promotion models that could effectively undergird the development of the questionnaire framework. Additionally the Principal Investigator prompted brainstorming sessions concentrating on questionnaire administration strategies and methods that may effectively lend themselves to capturing the various levels of behavioral influences that may prove to be significant links to increasing mammogram utilization among underserved women with healthcare coverage. As a result of this exchange of ideas and recommendations, it was decided that the study would use the Precede-Proceed Model to assist with the questionnaire development (10). The Precede-Proceed Model was selected because its overriding principle states that most enduring health behavior change is voluntary in nature and that its planning process seeks to empower individuals with understanding, motivation, and skills to actively engage in community affairs to improve their quality of life. This model clearly provides the avenue necessary to properly identify measurable behavioral influences or factors. In addition, it transitions easily from a tool for questionnaire development into the framework necessary for data analysis.

1.2. Hire and train staff

Ms. Tonya Micah was hired as the program coordinator. Ms. Micah has worked several years in cancer research at Meharry Medical College and was recruited

from within the institution. Her experience includes research related breast cancer prevention recruitment and education among underserved populations and she previously served as the Breast Health Education Coordinator on the DOD grant entitled Promoting Breast Cancer Screening in a Low Income Managed Care Population. Due to her experience, her work focused primarily upon the research design and questionnaire development using literature reviews as a foundation. Ms. Micah has years of experience working in the community with research efforts and has a very positive working relationship with the Tennessee Coordinated Care Network's Health Promotion and Disease Prevention Department. Her continued professional development during this study includes training in analysis.

1.3. Meeting with MCO administrators; workout data exchange and other policies

Tennessee Coordinator Care Network (TCCN) was contacted regarding their involvement with the study on August 27, 1999. A meeting was held with the MCO officials on October 4, 1999 at their corporate head quarters, 210 Athens Way, Metro Center, Nashville, TN 37228. During this meeting the research effort was formally introduced to TCCN corporate representatives, Mr. Yigzaw Belay, M.S., PAHM, Director, Health Promotion and Disease Prevention & Outreach and Mrs. Penni K. Dickerson, Regional Outreach Coordinator, SE Region. During the meeting the Principal Investigator successfully secured an agreement from TCCN to continue to support the breast cancer prevention activities which began with the late Dr. Robert E. Hardy, M.D., MPH with Meharry Medical College by way of the newly funded Empowering Factors Breast Health Study.

Mr. Belay assured the study Principal Investigator that this effort would be given TCCN's full support. A second meeting was held December 15, 1999 to work out the data exchange and other policies of the partnership. This meeting focused upon identifying the study population through the use of claims data. The framework of the profile was discussed in detail and the meeting concluded with Mr. Belay requesting the study population profile be submitted to him in writing so that he could follow up with the appropriate departments with TCCN. The subject profile was submitted in writing to Mr. Belay the same week.

1.4. Identify study population and select randomized sample of the subjects.

The profile of the study population was defined during this period. The study population criteria include TennCare eligible women, between the ages of 40 and 49 who have had their screening mammograms routinely performed every one to two years, and annually beginning at age 50. Due to a delay in receiving the claims data, it was not possible to perform the randomization process, or to identify the specific women to include in the study within the timeline. The claims data was received in late September 2000; the randomization was done during the next project phase.

2. Months 7-12

2.1. Select focus group members

In light of the delay in receiving the claims data, the partner MCO was contacted to explore other alternatives to recruiting focus group participants. As a result of these discussions, focus group members were selected under the direction of Mrs. Penni Dickerson who used her Outreach staff to recruit those MCO members who fit the profile. This method of recruitment proved to be very helpful. But due to the efforts to adhere to the timeline, women with the same profile were also recruited through the Metropolitan Health Department of Nashville, Project Silver (Matthew Walker Comprehensive Health Center's Senior Program) and through Meharry Medical College. These combined efforts resulted in the study successfully recruiting focus group participants who did fit the appropriate criteria.

2.2. Conduct five in-depth focus group discussions

To explore the influencing and/or facilitating factors that empower women to overcome actual and perceived barriers to mammography screening, in-depth focus group discussions were conducted April-May 2000 at Meharry Medical College. Eight one-hour discussions instead of five were held to accommodate the schedules of the women recruited. Twenty-five women participated.

The discussions proved to be very informative and productive. Three main topics were addressed and the women's responses are as follows:

1. Why did you have your first mammogram? The majority of the women responded that they received their first mammogram because their doctor recommended it;

2. What helps you to get your mammogram? The women reported that knowing their risk for breast cancer and their belief in the benefits of early detection are the primary influences that encourage them to be routinely screened. Their responses revealed that they viewed themselves as being personally responsible for their health. The women made comments and used phrases that indicated that were knowledgeable about breast cancer preventive measures such as mammography, self and clinical breast examinations. While the women did not always use the correct phrases when expressing their experiences and feelings about breast cancer, they were accurate regarding how important it is to detect diseases like breast cancer early. Many of the women shared personal stories of friends and family affected by breast cancer that was not detected early.

3. What really discourages you from having your mammogram? Interestingly the focus group participants, while being screening compliant, voiced strong opinions concerning those things about mammography that they

find to be personally discouraging or discouraging to their non-compliant counterparts. The women reported problems with the healthcare delivery system. Receiving poor and unprofessional service at the mammography site topped the list of healthcare delivery problems. Specifically, having to sit too long in the waiting room, dealing with technicians who do not take their time to explain the process, and that are non-responsive to signs or expressions of pain during the mammogram. One participant commented, “I really didn’t want to say anything. I felt embarrassed because I could feel myself about to cry from the pain.

Deep inside I was hoping that she (the technician) would notice that I was really hurting and say something but she didn’t say anything and I didn’t say anything. It took a lot for me to go back after all of that”. The women also reported that the time it takes to get their test results is too long. Waiting for the results was described as “being on an emotional roller coaster”. One participant stated “Waiting to find out puts your life on hold; it is all you can think about. I wish they would just tell me if the mammogram found anything or not and let me go home in peace”.

Despite all of these negative influences, the women’s decisional balance places the lifesaving benefits of mammography above the inconveniences and discouraging factors reported. Their knowledge and belief in early detection appears to enable them to overcome these barriers. Other observations about these screening compliant women include signs that these women are punctual, organized and articulate. It was observed through group interaction that their overall problem solving and decision making ability seems to enhance their receptiveness to adopting health seeking behaviors. For example, remarks exchanged between the participants often included them sharing problem solving tips about health and/or family/relationship topics. As a result questions were included in the questionnaire to capture some of these measures.

2.3. Analyze focus group information using qualitative analysis software

Focus group discussion data were analyzed. The Qualitative Analysis Software, NUD*IST was not utilized because the sample size is not large enough for a meaningful content analysis.

2.4. Prepare semi-structured guide questionnaire

The semi-structured questionnaire (Appendix A) was developed during this reporting period. The questionnaire is comprised of items from three approved questionnaires. Additional questions were added based upon feedback gathered during the focus group discussions and literature reviews. The questionnaire was submitted to Meharry Medical College’s Institutional Review Board for approval in month 12.

3. Months 13-17

3.1. Preparation of the article from focus group discussions

Twenty-five mammography compliant women took part in focus group discussions. The demographic characteristics of the focus group participants suggested that they represent the Low-income Underserved Women Population and the results compiled from the discussions reflect this population's view of important issues. Results from focus group discussions were summarized in several tables. The themes captured in the discussions emerged into three distinct areas of public health care. The first one focuses on issues related to health care delivery system; the second one deals with economic issues and the third one highlights issues that can be addressed with personal empowerment.

The first area of interest addressed multiple dimensions of the health care delivery system and is published under the title of "***How the Health Care System Can Improve Mammography-Screening Rates for Underserved Women: A Closer Look at the Health Care Delivery System***" (Appendix B, publications). The second and third areas of interest were combined for an article published later in the SOW, "***Empowering Factors in Repeat Mammography: Insights from the Stories of Underserved Women.***" (Appendix B)

3.2. Prepare semi-structured guide questionnaire

The semi-structured questionnaire was submitted to and approved by Meharry Medical College's Internal Review Board. Once this approval was received, it was sent to DOD Regulatory Compliance and Quality Office for review.

4. Months 18-21

4.1. Conduct Pilot Survey on a Random Sample of 90

Eighty-percent (72) of the completed survey questionnaires were received from the field. There are three regions of the State of Tennessee; West, Middle and East. West and Middle Tennessee surveys were completed and a major part of East region was done by month 21. The survey was begun with four months delay. It was not completed as in the originally planned time frame for several reasons:

- The response time for approval of the *Human Subject Consent Form* DOD Regulatory Compliance and Quality Office was longer than initially anticipated.
- Lack of availability of participants: the target population is mostly working poor and underserved; mobile population, a wrong or no domicile physical address; availability at home is difficult and when at home a time for interview is not easy within the frame of daily competing priorities. Therefore, it takes several attempts to reach one completed interview.

- Complexity of Community Health Outreach Worker (CHOW) responsibility and workload: CHOWs work with many different projects along with this one. It is not always easy one to locate pre-select members for this survey.
- The pilot survey was conducted by lay health workers employed by the MCO Access MedPlus, who handles TennCare accounts. Towards the end of the survey, Access MedPlus lost its funding through the state program TennCare and went out of business. The workers conducting the survey were laid off. As a result, all survey activity slowed and eventually stopped.

5. Months 18-21

Analyze data gathered from the semi-structured questionnaire

Though the survey was terminated prematurely, only five participants were not interviewed. Data were entered and error and consistency checks performed. The data gathered were sufficient to begin analysis once data entry was complete. Details are in the publication "*Empowering Factors for Regular Mammography Screening in Underserved Populations: Pilot Survey Results in Tennessee*" (Appendix A).

6. Months 22-33

Prepare questionnaire for final survey

Due to Access MedPlus, our partner in administering all of the surveys, going out of business, we had to transpose our survey structure from an interview style to telephone. With the time limitations inherent with telephone interviews, questions had to be collapsed to fit within about 20-25 minutes. Preparation for the final survey took longer than expected due to the research assistant for the project quitting in the middle of the survey collection phase in order to pursue other career opportunities. Duties for preparing the survey were distributed among the remaining support staff and were completed.

7. Months 33-38

Finalize questionnaire after experts' review

The proposed questionnaire was distributed to several experts for review and recommendations. These voluntary reviewers included Psychologists, Survey managers, Health Behavioral Scientists, Public Health Researchers, Outreach Researchers and Biostatisticians. Due to their voluntary status, responses were slow in coming back to us. During this time, we also began negotiating with agencies to administer the final survey. This involved evaluating the capabilities of each agency and the feasibility of their respective strategies. We also began conducting interviews to fill the vacant research assistant position.

Due to a hiring freeze at Meharry Medical College in this year, the Research Assistant position was delayed in posting as was interviewing and hiring. The questionnaire was not addressed until the new Research Assistant was adjusted to the position. Progress on publications was made at this time.

After the probationary and training period for the RA was complete, the questionnaire for the final survey was completed. See Appendix C.

8. Months 38-42

Program questionnaire into CATI system for telephone interview.

Due to delay in questionnaire finalization, programming for Computer Assisted Telephone Interview (CATI) was also delayed. The original consultant retained for the programming removed his application for the project. The decision was made to shift programming duties to the interview agency which required the completion of contracts and IRB approval prior to programming commencement.

After the contract with the Metro Nashville/Davidson County Health Department was agreed upon, CATI programming commenced and was completed.

9. Months 43-48

Write manuscripts based on gathered information.

Reporting of the qualitative and pilot study results was moved up the timeline due to the new Research Assistant's background in technical writing. This change in priority was made to take advantage of his skills that did not require a learning curve and to allow him to become familiar with the study protocol and progress as well as familiarity with the institution's operational procedures.

Two papers were published at this time;

1. Ahmed NU, Fort JG, Elzey JD, Belay Y. Empowering Factors for Regular Mammography Screening in Underserved Populations: Pilot Survey Results in Tennessee. *Ethnicity & Disease*, 15: (3) 387-394; 2005.
2. Ahmed NU, Fort JG, Elzey JD, Bailey S. Empowering Factors in Repeat Mammography: Insights from the Stories of Underserved Women. *J Ambulatory Care Manage*, 27: (4) 368-375; 2004.

10. Month 47

Receive HIPAA training for all staff

Training for the Health Information Portability and Accountability Act was obtained through Meharry Medical College for all staff involved with project.

11. Months 48

Update subject list or receive new list from agency

Due to the size of the sample obtained from the original agency, now out of business, the decision was made to continue with that database. The subject list was updated to comply with HIPAA privacy requirements before being transferred to the Metro Nashville/Davidson County Health Department. Training began for the interviewers.

12. Month 49-54

Conduct Survey

Commencement of the survey was delayed due to the difficulties in contracting a new CATI programmer and finalizing negotiations with the surveying group. Several weeks into the survey, we became aware of the difficulty in contacting this population group. The women we were contacting have incomes that average between five and ten thousand dollars a year. Due to economic pressures, this population has a very high transience rate.

We extended the original end date for data collection to compensate for this unanticipated difficulty. Our subject list, approximately 13,000 names, returned a 40% bad number rate, indicating either a disconnected number or that the client no longer lived at that address. After exhausting options for a higher contact rate, we terminated data collection. The final number of participants was 704; 350 compliant women and 354 non-compliant.

13. Months 49-54

Clean data and complete analysis

Due to the difficulties in completing data collection, cleaning was delayed. Due to faculty changes, completion of analysis was delayed. Cleaning and analysis are now complete.

KEY RESEARCH ACCOMPLISHMENTS

Preliminary Results

The significant ($p < .05$) difference between compliant and non-compliant groups are as follows:

Compliant women were **more likely** than non-compliant women to:

- be aware of health care services in the community
- know of women with or who have died from breast cancer
- believe that regular mammography screening is necessary for breast cancer detection
- take action even if there is no problem in the breast
- go for a mammography without a doctor's recommendation
- have self-efficacy
- know about free mammograms
- have breast conditions (other than cancer)

Non-compliant women were **more likely** than compliant women to:

- report cost as a barrier to medical services and mammography
- report time barriers (hectic work schedule and family needs) to getting mammograms
- have difficulty in remembering schedule
- be a current smoker
- be physically inactive
- be uninsured
- have no source of usual health care
- report a late health checkup (e.g. more than three years ago)
- describe mammograms as uncomfortable, painful, scary and stressful
- never have had a mammogram
- report less chronic disease (high BP, Cholesterol or Arthritis)
- live in eastern regions of the state

REPORTABLE OUTCOMES

Published Manuscripts

1. Ahmed NU, Fort JG, Micah TH, Belay Y. How the Health Care System Can Improve Screening Mammography Rates for Underserved Women: A Closer Look at the Health Care Delivery System. *The Journal of Ambulatory Care Management* 24 (3), 17-26, 2001
2. Ahmed NU, Fort JG, Elzey J, Bailey S. Empowering Factors in Repeat Mammography: Insights from the Stories of Underserved Women. *The Journal of Ambulatory Care Management*: 27 (4) 368-375, 2004
3. Ahmed NU, Fort JG, Elzey J, Belay Y. Empowering Factors for Regular Mammography Screening in Underserved Populations: Pilot Survey Results in Tennessee. *Ethnicity & Disease* 15 (3): 387-394; 2005

Published Abstracts

1. Ahmed NU, Fort JG, Elzey J, and Belay Y. Regular Mammography Screening: Making it Matter. *Ethnicity & Disease* 15 (3); 521; 2005
2. Ahmed NU, Fort JG, Schlundt DG, Belay Y, Grandison D, Pamies R. Overcoming barriers to screening mammography in an underserved population. Insights from the experience of compliant underserved women. *Era of Hope*, 1: p18-20; 2002

Submitted Manuscripts

1. Ahmed NU, Fort JG, Micah TH, Dickerson P Belay Y. Needed Change in the Healthcare System: Perspectives of Lay Health Workers on Cancer Prevention (Submitted to *Journal of Ambulatory Care Management* 2005)

Manuscripts in Preparation

1. Larson, C, Ahmed NU, Fort JG. Predictors of Empowering Factors for Regular Repeat Mammography Screening in a Underserved Low-income Population

PERSONNEL WHO RECEIVED PAY

Nasar U. Ahmed, PhD

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OBSTACLES IN ACCOMPLISHING STATED WORK ON TIME

- Access MedPlus, our initial research partner agency, on October 17, 2001, lost its contract with the Tennessee State Government TennCare Program. The TennCare program was enacted to ensure health services for Medicare, Medicaid, uninsured, and uninsurable, working poor and underserved populations. Access MedPlus had been providing health services to TennCare recipients for the prior seven years. Our target group is from underserved populations who came from the Access MedPlus member pool as TennCare recipients. Due to loss of the contract with the State, the company is completely out of business and our access to the target population through was no longer available. Access MedPlus had a large number of Community Health Outreach Workers (CHOWs) and they were involved in interviewing the selected members in their territory of service. The CHOWs were subsequently laid off and unavailable as a resource for the study.
- The process of replacing the Research Assistant who left in year three was slowed due to a hiring freeze at the institution that required special permission to circumvent. Once the position was posted, the interview process and training period of the new RA consumed much of the time anticipated for completing the questionnaire. To compensate, work was completed on one research paper using

data from the focus group stage of the project and the bulk of a research paper completed using data from last year's pilot survey.

- The expected consultant who was going to program the questionnaire into CATI was unavailable at the time of questionnaire completion. The burden of programming was pushed back to the survey agency, requiring a delay in program completion pending finalization of contract negotiations with Metro Nashville/Davidson County Health Department. Finalization of agency contract was delayed due to their backlog of other partnership obligations and a managerial change at their site location. This delay, in turn, delayed the start of data collection.
- The late start of data collection was further compounded by the difficulty in reaching such an economically deprived population. Data collection efforts were extended by several months to reach a statistically feasible database.
- After submission of last report, assignment of Principal Investigator was changed to Dr. Jane Fort as the previous PI, Dr. Nasar Ahmed, left the award institution, Meharry Medical College. A subcontract for the completion of the project was subsequently drawn for Dr. Ahmed's new institution, Florida International University.

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Appendix A
(Publications)

How the Health Care System Can Improve Mammography-Screening Rates for Underserved Women: A Closer Look at the Health Care Delivery System

Nasar U. Ahmed, PhD

Jane G. Fort, PhD

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The way care is delivered has dramatic impact on the patient-provider interaction and the outcomes experienced by the patient. This article explores a deceptively simple but very powerful method for evaluating and improving care delivery. Mammography is a routine screening procedure. However, many factors can influence how frequently women seek and obtain mammograms. Twenty-five low-income women identifying empowering factors and barriers they experienced when trying to obtain a mammogram. Key words: *African American, breast cancer, focus group, health care services delivery, insurance, managed care organization, quality of care, role of physicians, screening-compliant mammography, underserved*

[AQ1] BREAST CANCER IS THE second leading cause of cancer death in all women (American Cancer Society, 2001). One in every eight women in the United States will develop breast cancer (National Cancer Institute, 2000). Feig (1988) pointed out that breast cancer mortality could be reduced by up to 50% through regular screening and early detection by mammography. Today, mammography remains the most effective means of detecting cancer of the breast early in its development. Unfortunately, despite numerous research and intervention efforts, mammography is still underutilized by all groups of eligible women (Breast Cancer Screening Consortium, 1990; Burack et al., 1989; Centers for Disease Control and Prevention, 1988; Whitman et al., 1994; Yancey & Walden, 1994). Among the groups whose utilization is lowest are the low-income, minority, and elderly populations (Siegel, Frazier, Moridis, Breakbill, & Smith, 1991). Recent data (Chevarley & White, 1997) show that the utilization rate could be as

low as 21% for underserved populations. Most recently, health promotion and disease prevention objectives for the nation (U.S. Department of Health & Human Services, 2000) include Cancer Objective 3–13: “Increase the proportion of women

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[AQ2]

aged 40 years and older who have received a mammogram within the preceding 2 years." While this objective has nearly been achieved for black and white women, there is much work yet to be done for poor and undereducated women, particularly given the current commitment to eliminate racial and ethnic disparities in cancer screening and management.

Interventions to improve the rates of mammography have varying degrees of success. Many interventions are unsuccessful because they fail to address the real needs of target groups (Hornik, 1985; Manoff, 1985), especially underserved populations (Sung et al., 1992). Studies suggest that lack of insurance is the most common objective barrier to mammography screening. Recently, changes in health care insurance options have effectively removed this barrier. Still, a vast majority of women in the recommended age bracket are not seeking or obtaining free mammograms. However, many women (30%) with sociocultural backgrounds and situations comparable to their noncompliant counterparts have indeed obtained their mammograms.

The purpose of the "empowering factors" research is to study these underserved compliant women who may provide insights regarding what triggered their desired mammography-screening behavior. Previously, numerous studies (Michielitte et al., 1989; Owen & Long, 1990; Rosenstock, 1974; Sung et al., 1992) have explored and documented why target groups fail to perform healthy behaviors. Very little attention has been paid to how, despite all barriers, some women are still successful in getting regular mammograms.

The study is intended to explore how compliant women are successful in overcoming barriers in getting a mammogram. This novel approach focuses on what empowers these women to be successful. Our study identifies the specific driving forces

that facilitate compliant groups to routinely seek breast cancer screening, and it systematically studies the screening-related personal experiences of compliant women. These women, if given the opportunity in comfortable settings to express and explain their decision-making process, may provide a wealth of information about their success in overcoming barriers.

The collection of nonstandardized information will help investigators maximize the discovery of behavioral factors and clues in the process of decision making. The information gathered from these women's stories, comments, and histories will form the basis for inductive analysis. During this type of research, a theoretical framework may evolve to explain the phenomena of their decision-making process. However we did use some constructs from the Precede-Proceed model (Green & Kreuter, 1991) as a general guideline to identify, measure, and classify the factors that empowered women with the understanding, motivations, and actions needed to overcome barriers to mammography screening.

Focus group discussion was used as a part of our planned exploratory research to capture the experiences of mammography screening-compliant underserved women who are members of a managed care organization (MCO). The research explores innovative influencing and facilitating factors that empower people to overcome actual and perceived barriers in real-life situations and offers an opportunity for discussion and clarification. Although ideally every woman should take responsibility for her health care needs, a vast majority of underserved women are not able to meet that responsibility. The added burden of meeting life's daily demands with limited resources and options creates the need among these women for more support from the health care system. The health care system could play a major role in reducing the barriers

[AQ3]

to improving women's preventative health care-seeking practices (Ansell et al., 1988; Bloom, Grazier, Hodge, & Hayes, 1991; Caplan, Wells, & Haynes, 1992; Lacey et al., 1989; Lacey et al., 1991; Vernon et al., 1992). This article identifies the key factors in the health care system that significantly influence mammography-screening behavior. These factors were drawn from the responses provided in the focus group discussions based upon the participants' interaction with the health care system in obtaining a screening mammogram.

METHODS

During one month period in Spring 2000, eight focus groups were conducted with underserved women who received regular screening mammography in Nashville, Tennessee. All group discussions were held in the Training Referral Resource Site at Meharry Medical College, a well-known historically black college. Using lists provided by the Metropolitan Health Department and a statewide MCO (Tennessee Coordinated Care Network-TCCN) licensed to cover the poor and uninsurable/underinsurable people in Tennessee, mammography-compliant subjects were identified to participate based upon age and income.

The eligible adults were females, were 40 years of age and older, had no personal history of breast cancer, and had no professional involvement with health care. While health insurance status was not a criterion, the method of recruitment provided a sample of women who all had health insurance through TennCare. Since this study seeks to identify mammography-screening barriers and empowering factors, only women who reported a history of following the recommended guidelines for mammography screening were invited to participate. A total of 25 women participated in the focus group

sessions, and eight separate focus group discussions were held.

All participants were African American, with the exception of one white woman. It is difficult to reach and recruit low-income women for health-related activities such as focus discussion participation. The task is even more challenging when the pool of eligibility has been narrowed to only those who are following the recommended mammography-screening guidelines. Therefore, the focus discussion activity was designed to make participation extremely attractive and convenient and to place as little burden as possible on the participants. The incentives for participation included \$20, a free lunch, free transportation, and parting gifts (attractive posters and cookbooks).

An average of three participants in each group met for 1 hour with a professional group moderator. After the giving of informed consent and an introduction, participants discussed personal mammography experiences along with their thoughts, attitudes, and feelings about what is helpful and what makes obtaining a mammogram difficult or discouraging.

Data captured from the participant's responses were then sorted using the framework of the Precede-Proceed model (Green & Kreuter, 1991). The findings reported here [AQ4] include the use of the participant's words to paint a clear picture of the developing themes or factors.

RESULTS

Demographic characteristics of the sample

Twenty-five regular mammography screening-compliant women took part in focus group discussions. The participants ranged in age from 42 to 80, with a mean age of 60 years ($SD \pm 11$). About 28% were in the 40-49 age group and the

50–64 age group and about 44% were in the 65 and older age group. The residences of the participants were in and around the poor and underserved areas of Nashville. This sample is generally representative (in terms of age distribution and geographical location) of the underserved population enrolled in the MCO study partner. The educational achievement and income of these participants were similar to noncompliant women. About 28% of these participants did not complete high school, 52% completed grade 12, and 20% had above a high school education. The mean year of education was 11.9 years ($SD \pm 2.4$). About three-fourths of the participants had an annual income of less than \$10,000, and 17% earned less than \$5,000 per year.

History of health care utilization behavior

All the participants were regular in health checkups and screening mammography. The reasons for their first mammogram were as follows: 36% mentioned the risk factor age, 32% had the mammogram because of a doctor's recommendation, 24% because of a benign lump, and 8% because of a family history of breast cancer. As for family history breast cancer relationships, 4% said their mother had breast cancer, 4% mentioned sisters, and 16% mentioned aunts.

Health care system factors affecting mammography-screening behavior

The focus group participants experienced numerous difficulties during their regular mammography visits. The following three questions concerning mammography screening were presented to the groups:

1. Why did you have your first mammogram?
2. What helps you get your mammogram?
3. What discourages mammography screening?

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Table 1
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text.

Their experiences and perspectives have been arranged under the following topics for ease of presentation, discussion, and making recommendations (see Table 2).

Table 2
[AQ6]

Physicians

Physicians play a major role in people's health and well-being through recommending prevention activities and curative ones. The physician's referral was mentioned as a strong influence on screening mammography. A good physician-patient relationship and having a woman as primary care physician had a greater influence on getting breast cancer knowledge and a referral for mammography. The following comment reflects a consensus among the focus group participants about the importance of the "physician-patient relationship" in communicating trustworthiness for decision making regarding personal health issues:

I like my doctor because he knows how to talk to people. He don't talk down on me and he don't sugar coat nothing either. He just tells me straight and he listen when I am worried about something. He takes the time to understand exactly what I am trying to say and this makes me feel like listening when he let me know he was serious about me getting mammogram and pap test. We [me and my doctor] have a good understanding of one another.

The gender of their health care providers (physicians, technicians, etc.) was important to a majority women but not all in the focus groups. The following remark illustrates this view:

Now me personally, I don't care as long as it is a good doctor but I have many friends who have told me

The gender of their health care providers (physicians, technicians, etc.) was important to a majority women but not all.

that they thought the doctor might be trying to look at them funny. You know it's so much on television nowadays about bad doctors that it makes women afraid that stuff could happen for real, you know—more afraid of trusting even the doctors at the clinic. For women like that, they probably would be more comfortable with a lady doctor.

Health care facility staff

There are a few steps in the process before women get a referral from their physicians and many more steps before they receive a mammography screening and the test results. The health care facility staff play a major role in the process and can make it smooth or difficult. The impression the staff make remains in the minds of the clients and influences whether they come for a mammogram or avoid the facility altogether. The focus group discussion on health care staff indicates that the following are viewed as positive: a good manner, a female provider, explanation of the mammography-screening process, step-by-step explanation of the test as it is in progress, and sensitivity toward the discomfort caused by the test. Experienced as negative were the following: rude and unsympathetic behavior, a male provider, repeat mammography due to carelessness and poorly trained technicians, rough handling of the breasts, unresponsiveness to complaints of pain during the testing process, use of technical jargon and other unfamiliar words ("big words") during communication, and inadequate privacy when being asked sensitive personal information. A participant shared this comment regarding the importance of having a nice staff at the health care facility.

I went to this one place my doctor referred me for my mammogram and as soon as I got there I knew I was going to have a problem. The lady would not look up from her desk when I walked to the counter to sign in so I spoke but she snapped off that I should just sign in and have a seat. I repeated my hello again and made sure that she knew I expected her to speak to me and she finally spoke but this really turned me off and then

I felt myself get a little bit of an attitude. I know how to be professional but if you treat me like I am below you I will get you straight and some people with these good jobs don't know how to talk to people. Even if you are really good at what you do you do you not have the right to talk down to anybody. I'm not going there anymore. It may not seem like a big deal but I believe it is proper to speak when you are spoken to. It won't hurt you to speak and it might make that person feel better too. Good old fashion manners still go a long way when it comes to dealing with the public. Now I am a strong person but it did bother me that she acted like she didn't want to speak to me. I go to another place [mammogram facility] now and I have not had that problem anymore.

Patient services and facility management

The following issues relating to health care facility management were mentioned by participants:

- complicated and repetitive forms and paperwork
- difficulty in getting an appointment
- too long of a wait in the reception room before seeing a physician or mammography technician
- slow turnaround for mammography test results
- receiving of mammography services from various facilities and different technicians
- keeping of mammography records in different places

The following comment reflects a few of the difficulties that older women encounter when seeking a screening mammogram:

I get lost easy and it is very stressful for me when I am sent somewhere I have never been before, especially when I can't get my daughter to go with me. This is why being able to go to the same place every year to get my mammogram really helps me to get the test done. It's a lot of places I just don't go because I am not good with directions and I am at an age that being lost can even be dangerous. Another thing, I like [about going to the same place] is they know me and I don't have a lot of surprises. I ask for the same person before I get there and I try to go when she is there. It's

like seeing an old friend. She knows me and my breast and I believe I am getting a better test done because of this.

Health care facility

The physical appearance of the facility, the convenience of the location, and user-friendly and reliable equipment were reported as important by the focus group participants, as indicated by this quotation from a focus group participant:

I go to _____ hospital for my mammogram and they got it set up real nice. You have a locker to put your clothes and purse and the lock works. And it smells nice like a place women would want to be. They even made sure that the pictures are not of white women or any particular race but instead just pictures of shadows of women so nobody will feel they are being left out. I really like that even better than seeing just black women on the wall. The pictures they have just reminds you that women are women, that's the way it should be. Another thing I noticed was the magazines were not just a bunch of old magazines from somebody's house, but good magazines that were recent. I enjoyed looking at the pictures in the magazines and just when I started trying to read one of the articles, they called me in to begin the test. But if I had to sit there I could watch T.V. or read something good and not feel I had nothing to do but wait.

DISCUSSION

The health care system must reexamine its processes and procedures and determine whether the successes to date can be sustained and improved in light of the national commitment to eliminate racial and ethnic disparities in cancer screening and management. The lessons learned from this research can be useful for sensitizing the system and improving services to underserved populations. The current project's partnering with an MCO allows the opportunity to examine the experiences of poor and underserved women's interaction with mammography screening services. The women in the sample were articulate and candid about their

personal attitudes and experiences and about what they thought would be the attitudes and experiences of others similar to them.

It is clear from the responses made in the focus groups that there is much the health care system can do to improve its contact with this population of poor and underserved women. The first and foremost issue is the *role of the physician*. Studies continue to emphasize the importance of the physician's recommendation for mammography screening as well as for other procedures. Although physicians are busy and patients are usually being seen for presenting problems rather than for preventive measures, it is important to reconsider the work schedule of the office and the various resources that might be available to assist in the important task of direct referral for preventive services. Patient-chart reminders, for example, were found to be very useful for helping physicians to remember to emphasize the importance of mammography screening, and they also prompt physicians to provide mammography referrals.

Personal characteristics are important, not only for the primary health care provider or physician (Kreuter, Strecher, Harris, Kobrin, & Skinner, 1995), but for the mammography technician and support staff also. While there exists a physician shortage, particularly a shortage of physicians who provide services to underserved populations, the many avenues being pursued in an attempt to address the shortage may prove insufficient. In any case, it will not always be possible to match the race/ethnicity and gender of the health care providers to those of the service or target population. However, it may be possible to reorganize the *job assignments*, particularly in services that are as personal as mammography, and thereby increase the possibility that women will be served by women. It is also possible for receptionists to provide

reminders about the need for mammography screening, and some of the many publications and/or videos on mammography screening that now exist can be provided as waiting room resources. Perhaps simple changes in clinic activity can lead to significant improvements in the provision of services to the target populations.

The results also indicate that the *interpersonal interaction* is an important element in the physician-patient dyad. A good relationship facilitates compliance. The women in the sample pointed out several issues that can be addressed through sensitive and increased staff training. Clearly, mammography technicians must be sensitive to the nature of the procedure and to each woman's individual process; responding in a manner that indicates such sensitivity is not lost on the client. The more important concern is the need for *care and competence* during the procedure. The women in the sample were aware of instances when the technician appeared to be unsure or incompetent or insensitive. It is important for screening staff to take care in explaining the test beforehand and while it is in progress so that the women know what to expect next. If the necessary personal health education cannot be undertaken by the physician, nurse, or health educator at the time of the referral, then it must be undertaken at the site prior to the procedure. *Initial staff training* and periodic refreshers in specific procedures and interactions would diminish the likelihood of discouraging clients because of lack of familiarity with the procedures or of staff insensitivity. It is evident

The more important concern is the need for care and competence during the procedure.

that the usual and assumed professional behavior must be reinforced.

Management of the complete health care process, including mammography, will assist in establishing the desired prevention behavior and in fostering client compliance with guidelines over time. Consistency strengthens the habit: facilities that provide several procedures and in which technician turnover is low will likely find increases in the number of clients who comply with the referral for mammography screening. Even where there is little or no control over offerings or staff turnover, procedures can be established that would diminish some of the barriers women face.

The length of time between arrival for the procedure and being seen is an issue, as is the time before feedback is received. While emergencies do occasionally interrupt the day's schedule, closer attention to scheduling and arrival time may serve to decrease the average amount of time patients spend in the waiting room. It may also be possible to schedule a mammography period that coincides with the availability of the radiologist so that several readings can be made at the time of the visit, allowing the patient to receive immediate feedback.

The importance of *communication*, written and oral, cannot be overstated. Communication is capable of making or breaking a relationship of any kind. Attention to each step in the process—from scheduling to registration on arrival, taking the health history, giving procedural directions, and reporting—can increase the ease of mind with which a woman considers her next screening mammogram. Again, reinforcement of desired and acceptable staff behavior may be all that is necessary to make women perceive the procedure as agreeable.

There may be little that can be done about existing facilities other than making cosmetic improvements, but attention

can be directed toward seeing where and how the *mammography-screening environment* could be improved. When women notice how pleasant and attractive a facility or clinic appears as well as how convenient its location is to home or usual travel routes, they will be more inclined to decide in favor of further contact. It may be that such features will override the necessarily unpleasant aspects of mammography. Although the results of the test may be open to question (and that should be explained), it is still possible to manipulate the temperature, at least in the

dressing room, or provide warmer cover-ups.

It is clear that women, even those whose opportunities are limited by education and economics, are aware of the benefits of screening procedures, including mammography, and may comply with screening guidelines with some moderate changes in health care system procedures. It was possible to mobilize the health care system to increase the screening rates for Pap tests such that the 2000 target was adjusted upward; it will likely be possible to do the same for mammography screening in all populations.

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Table 1. Focus group discussion participant demographics and family history of cancer

	Percent
Age (in years)	
40-49	28%
50-64	28%
65 & over	44%
Total	100%
Annual income	
Less than \$5,000	17%
\$5,000-\$10,000	57%
\$10,001-\$15,000	22%
\$15,001 and over	4%
Total	100%
Educational level	
Less than 12th grade	28%
12th grade	52%
12th grade+	20%
Total	100%
Reason for first mammogram	
Age	36%
Doctor recommended	32%
Lump in breast	24%
Family history	8%
Total	100%
Family history of breast cancer	
Mother had breast cancer	4%
Sister had breast cancer	8%
Aunt had breast cancer	16%
Grandmother had breast cancer	0%

Table 2. Factors in health care system affecting mammography screening

	Positive
Physician	
1 Physician referral	Yes
2 Good physician-patient relationship	Yes
3 Female physician	Yes
4 Male physician	No
Health care staff	
1 Nice staff at mammogram facility	Yes
2 Good relationship with healthcare staff at mammogram site	Yes
3 Mammogram staff explains the process	Yes
4 Technician that gets a good x-ray the first time with little discomfort to patient	Yes
5 Female healthcare provider	Yes
6 Male health care provider	No
7 Poorly trained staff at mammogram facility	No
8 Mammogram staff using big words that are confusing	No
9 Mammogram staff arguing over procedures during the test	No
10 Rude and unprofessional staff at mammogram facility	No
11 Personal information being asked out loud in the presence of others	No
12 Technician not taking time to explain the mammogram process	No
13 Mammogram technician not responsive to complaints of pain	No
14 Technician handling breast in a rough manner	No
15 Fear of multiple compressions due to poor initial x-ray image	No
Patient services	
1 Getting mammogram results back quickly (2 days maximum)	Yes
2 Mammogram being given at the same location yearly	Yes
3 Having the same technician each year	Yes
4 Being seen for the mammogram at or close to the appointed time	Yes
5 Not being kept in the waiting room too long before being seen	Yes
6 Health forms that are easy to complete, non-repetitive and user friendly	Yes
7 Assurance that mammogram records are being properly kept together	Yes
8 Getting feedback about mammogram results before leaving	Yes
9 Having to wait too long (no more than 3 days) for the test results	No
10 Having to sit a long time in the waiting room before being tested	No
Health care facility	
1 Pleasant and attractive mammography facility	Yes
2 Convenient mammography site	Yes
3 Pain experienced from having a mammogram	No
4 Mammogram screening equipment cold	No
5 Mammogram results not always reliable	No

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Empowering Factors in Repeat Mammography: Insights From the Stories of Underserved Women

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[QAI]

Abstract: Mammographic screening can reduce breast cancer mortality. Although a significant percentage of underserved women obtain regular mammographic screenings, low income, minority women underutilize mammography and rates of regular screening are low in the general population. By structuring focus groups around constructs from the Precede-Proceed Model, our study explored how these underserved women overcame barriers to be screened on a regular basis. Twenty-eight items were categorized as *personal factors* that helped them overcome the barriers: *awareness and knowledge* of risk factors (age and family history); *knowledge and trust* in early detection and treatment processes; *personal responsibility* about own health and well-being; and *pride in self and satisfaction* with one's own actions. **Key words:** *breast cancer, empowering factors, repeat mammographic screening, risk reduction behavior, underserved*

THE American Cancer Society had estimated 40,000 deaths from breast cancer for 2003, making it the second most common cause of cancer deaths among women in the United States (American Cancer Society, 2003); 1 in every 8 American women will develop the disease (National Cancer Institute, 2002). Death from breast cancer

can be reduced substantially by early detection through regular mammographic screening and treatment (U.S. Department of Health and Human Services, 2000). Although there is a debate over the value of mammographic screening (Green & Taplin, 2003), the majority of well-designed, clinical studies support the continued use of mammography (Humphrey et al., 2002).

Despite numerous research and intervention efforts (Breast Cancer Consortium, 1990; Burack et al., 1989; Centers for Disease Control and Prevention, 1988; Jibaja-Weiss et al., 2003; Lacey et al., 1994; Yancey & Walden, 1994) and with nearly all North American health organizations recommending mammographic screening, it is still underutilized by all groups of eligible women, especially low-income, minority women and elderly women (Seigel et al., 1993). Data show that the rate could be as low as 21% for underserved populations (Chevarley & White, 1997). While the *Healthy People 2010* mammographic screening objective 3-13 (70%) had been nearly achieved in 2000 for black and white women, with 68% and 71% adherence, respectively, there is much work yet to be done for the

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poor (55%) and undereducated (57%) of all races (Centers for Disease Control and Prevention, 2000). Studies have found that about 20% of eligible women conform to yearly screening guidelines during a contiguous 2- or 3-year period (Champion, 1994; Howe, 1992; Lee & Vogel, 1995; Miller & Champion, 1996; Zapka et al., 1991) and between 1% and 10%, depending upon the criteria, for 5 years (Lerman et al., 1990; Rimer et al., 1991; Yood et al., 1999).

Efforts to improve mammographic screening rates have had varying degrees of success, but have not appropriately addressed the actual needs of target groups, especially in underserved populations (Sung et al., 1992). Although lack of insurance was believed to be the most common hindrance, recent changes in healthcare insurance options have effectively removed this barrier; however, this has had little impact. A majority of low-income women of the recommended age bracket are still not receiving or seeking free mammograms (Legg et al., 2003). Encouragingly, just more than 25% of women with socio-cultural backgrounds and situations comparable to their noncompliant counterparts have obtained regular mammograms or adhere to screening recommendations. Although research has studied why target groups fail to produce healthy behaviors (Michielutte et al., 1989; Owen & Long, 1989; Rosenstock, 1974; Sung et al., 1992), very little attention has been directed to determining how some women, such as the 25% mentioned above, are still successful, despite all barriers, in getting regular mammograms.

The present study used constructs from the Precede-Proceed Model as a general guide to conduct in-depth focus group discussions to gather information about the facilitating factors and barriers to mammography from experiences of regularly compliant, underserved women. *Precede* refers to predisposing, reinforcing, and enabling constructs in educational diagnosis and evaluation and *Proceed* refers to policy, regulatory, and organizational constructs in educational and environmental development (Green & Kreuter, 1991). The advantage of using this method is that it be-

gins with final consequences and works backward to identify causes. In this case, the final outcome is mammographic screening and the model helps us determine what factors must be present for a woman to seek a mammogram, or what must precede the outcome.

Two broad themes emerged from information gathered from our study population: (1) the role of the healthcare system in preventive health behaviors and practices and (2) a woman's personal responsibility. Although the healthcare system can play a major role in reducing barriers for women to improve their preventive healthcare practices, the responsibility ultimately lies with the woman herself. The study's findings on the role of healthcare were previously published and included recommendations for changes regarding the personal and behavioral characteristics of physicians as well as healthcare facility's physical characteristics and management (Ahmed et al., 2001).

The second theme, personal responsibility, is explored here. In spite of barriers often associated with the healthcare system, individuals must take responsibility for their own healthcare needs. The challenge for community health promotion initiatives is not only to minimize existing barriers but also to identify and leverage existing resources and assets, both internal and external, in order for populations to overcome the barriers. Our focus group participants were underserved women who indeed took control of their breast cancer screening needs on a regular basis and overcame reoccurring challenges with the limited resources at their disposal. This article explores, through their responses, stories, comments, and histories, their empowering mechanisms for repeatedly seeking mammographic screening. This information can stimulate initiatives to capitalize on assets among the poor and historically underserved.

METHODS

The project held 8 focus groups to gather feedback from 25 women, aged 40 and older with personal incomes of \$15,000 or

less, who adhered to routine mammographic screening guidelines (1-2 years from ages 40-49 and annually beginning at age 50). The discussions centered on the influences they considered as either empowering factors or barriers to breast cancer screening. Groups consisted of up to 5 participants and the formal sessions were for 1 hour. Information collected before the formal session included attendance, informed consent, payment record, and demographic characteristics of the participants. The following 3 questions concerning mammographic screening were presented to each group at the discussion sessions:

1. Why did you have your first mammogram?
2. What helps you get your mammogram?
3. What really discourages you from having your mammogram?

All participants identified themselves as African American, with the exception of one who identified herself as White. Eight percent of the women had grade 12 or less education, and 75% had an annual income of less than \$10,000. More than one fourth of the women (28%) indicated that they were aware of a relative who had experienced breast cancer: 4% had a mother, 8% had a sister, and 16% indicated an aunt. Ninety-four percent indicated they knew someone with cancer.

RESULTS

Based on discussions and consensus among the investigators, similar responses were collapsed into 28 items that were discussed frequently and intensely among the group participants. These 28 items were categorized as *personal factors* that influence obtaining regular mammograms: (1) *awareness and knowledge* of risk factors (age and family history); (2) *knowledge and trust* in early detection and treatment processes; (3) *personal responsibility* about own health and well-being; and (4) *pride in self and satisfaction* with one's own actions (Table 1). These elements incorporate predisposing, reinforcing, and enabling factors (Precede) that influence the outcome. Other responses, previously re-

ported, related to healthcare system barriers included physician characteristics, the healthcare facility, its staff, and management.

Awareness and knowledge

Many of our participants indicated that talk shows and radio shows discussing breast cancer brought the disease to their attention initially. Critical life events deepened most participants' awareness to a level where the individual was predisposed to act; they indicated that being aware of their family history and having family members who had faced a cancer challenge made them more sensitive to their increased personal risk. Consequently, they were oriented toward and willing to take responsibility for doing something to reduce it. They made comments such as the following:

When you know someone close or someone known to you is diagnosed with or dies of breast cancer, it opens your eyes.

Then if you know that it runs in your family, you better watch out.

These expressions of personalization indicate that critical events create very high levels of awareness and cues to action that, when combined with an understanding of cancer risk factors such as age and family history, provoke the individual to take care of her health.

Knowledge and trust

Our study women had adequate knowledge of the risk factors for breast cancer, knew the benefits of early detection, and had trust in the treatment and screening process. A majority of the focus group participants learned specific knowledge about breast cancer from a physician. Their trust in established medical procedures for dealing with breast cancer was indicated by comments such as the following:

Without routine mammographic screening, it may be too late to have the disease successfully treated.

Getting a regular mammography gives me peace of mind.

Table 1. Personal factors motivating and inhibiting repeat mammographic screening among the underserved*

Awareness of disease and knowledge of risk factors			
1. Knowing someone who has died from breast cancer or has breast cancer	+	p	
2. Knowing that there is a family history of cancer	+	r	
3. Exposure to breast cancer topic through talk shows and radio shows	+	p	
4. Knowing age is a risk factor	+	r	
5. Knowing family history of breast cancer is a risk factor	+	p	
6. Being told by others that mammography is painful	-		
Knowledge and trust in early detection and treatment processes			
7. Seeing a clean mammogram encourages positive health behavior	+	r	
8. Believing in benefits of early detection of breast cancer	+	p	
9. Believing in the reliability of mammogram and assurance experienced as a result of getting the test done	+	p	
10. Feeling better prepared because of mammography to deal with breast cancer if it strikes	+	e	
11. Getting a regular mammogram brings peace of mind that everything is OK	+	r	
12. Knowing and practicing proper breast self-examinations	+	e	
13. Too many tests needed as one grows older is too overwhelming and depressing	-		
14. Fear that mammography may find cancer	-		
15. Reduced urgency for routine mammography since previous test results were null	-		
Personal responsibility for individual and community health and well-being			
16. Personal sense of responsibility for health and well-being	+	p	
17. Being a good role model for the other women in the family by having a mammogram	+	r	
18. Ability to talk to family and friends or other women about breast cancer and other health issues	+	r	
19. Believing other women are more likely to get routine mammograms if they feel at risk for breast cancer	+	r	
20. Having other women in the family who are good role models for health and well-being	+	r	
21. Health-sensible lifestyle ("good old fashion values, hard work, proper rest, wholesome diet, and no bad health habits like smoking, drinking, and running around")	+	p	
22. Doctor's visits for regular check-ups	+	r	
Pride in self and satisfaction with one's own actions			
23. Having a regular mammogram gives a good feeling about doing something positive for oneself	+	r	
24. Having a positive attitude helps	+	e	
25. Getting a regular mammogram shows willingness to take control of own health	+	r	
26. Too shy to have a mammogram	-		
27. Worry and stress that occurs as a result of waiting for the mammography test results	-		
28. Fear of losing a breast, which could affect one's intimate relationship	-		

* + indicates motivating factor; - , inhibiting factor; p, predisposing; e, enabling; and r, reinforcing factor.

Personal responsibility

A major role in all aspects of life, including preventive health-seeking behavior, is one's personal attitude. Our focus group women were well informed as well as oriented toward, and willing to take responsibility for, do-

ing something to reduce their risk of cancer. This willingness was indicated by comments such as the following:

Having a positive attitude about myself helps me to make getting a mammogram important.

Mammography makes me feel better prepared to deal with breast cancer if it strikes.

Getting a regular mammogram gives me the peace of mind that everything is OK.

Preventive healthcare-seeking actions

Not surprisingly, one third of the participants took the initiative of seeking a doctor for their first mammography on the basis of their knowledge of age and family history as risk factors for breast cancer. Others acted after finding a lump while practicing breast self-examinations. To uncover the belief system and underlying influences that drive these women to be more proactive in protecting their breast health than do the majority of the female population, we identified the responses as predisposing, enabling, and reinforcing factors (see Table 1).

Pride and satisfaction: Internal reward system

Besides a personal sense of responsibility for health and well-being, the participants considered themselves as role models and acted accordingly by discussing health issues with friends and family. This sense of communal responsibility can lead to a clear understanding of risk as well as actions to take to reduce that risk. As one participant said:

A woman is more likely to get her mammogram if she feels at risk for breast cancer.

The overall comments of the focus group participants indicated an intense determination to keep breast cancer from becoming a killer, both personally and among their loved ones. Another participant stated:

I can't stop breast cancer from knocking on my front door, but it won't get past the front room if I can help it.

Others, more than half of the participants, expressed the importance of having been raised to go to the doctor and to seek certain health services. This family culture of health and well-being obligated them to teach the next generation by example, indicated by

comments such as the following:

Having a mammography makes me a good role model for the other women in my family.

I am able to talk to my family and friends about breast cancer.

[Having] other women in the family who are good role models for health.

Barriers overcome

These empowering and reinforcing factors, awareness and knowledge of risk factors, knowledge and trust in the healthcare process, attitudes of personal responsibility, preventive healthcare-seeking actions, and an internal reward system of pride and satisfaction, all contributed to overcoming barriers the participants readily acknowledged existed for them. Some indicated that the chance of finding cancer made it difficult to maintain adherence. Some described mammography as painful and several said that the discomfort of the procedure was discouraging. Another inhibitor they described was that as they age, the number and types of screening tests become overwhelming and depressing. Also, with increasing age, increased stress resulted while waiting for the results.

Another interesting barrier was that while finding nothing during a mammography is a relief as well as satisfying and reassuring, a null finding sometimes produced an overconfidence; nothing has been found, nothing will be found, therefore, mammography loses its priority.

DISCUSSION/IMPLICATIONS

Urban African American women who are compliant with the screening guidelines for breast cancer indicated many barriers that they must overcome to adhere to recommended guidelines. Our focus group participants' responses point the way toward the design and development of meaningful intervention efforts that could increase mammographic screening adherence among poor and underserved insured populations of American

women. It is clear that several predisposing factors were at work with these women. They had knowledge of and understood the general risk and results of cancer, including experiences from members of their families, giving them strong reasons to avoid the disease and to be attentive to procedures that are available and advocated.

Participants also evidenced attitudes that supported proactive behavior regarding one's health and well-being, developed within their family and also in interaction with others. They were enabled to act on their knowledge, concern, and interests because their healthcare providers were receptive and encouraging, the services and facilities were available, and their health maintenance organization (HMO) had supportive policies for regular mammograms, especially through community lay health workers assisting and encouraging participation in health programs.

Perhaps, most important for purposes of sustaining the screening behavior on a continual basis are the observations that these women who adhere to recommended mammography guidelines found comfort in knowing about and doing what they understood to be the current "state-of-the-art" detection process and also that they found satisfaction in being a role model for others.

As the healthcare system seeks to broaden its successes, providing simple and basic information about risks may be the first step to take with those patients who have access but who are not adhering to guidelines. Women who adhere to guidelines say it is important for them to understand their personal risk. Others may not comprehend the personal relative risk for breast cancer if they are unaware of cancer in their family or among their acquaintances. Efforts to increase mammographic screening may benefit from providing simple, clear information about the risk for cancer and about the capabilities, successes, and importance of mammography in early detection. The women who are compliant have the information about their personal risk and about how screening can be beneficial.

Cancer prevention information in the media enables women who are interested to

obtain useful information and support in following through on the screening. Since television is a major source of cancer prevention information for the urban black population of the Southeastern states (Semenya et al., 1997), it will continue to be important that cancer prevention efforts utilize televised media as much as possible. Our study women indicated that breast cancer as a featured topic on radio and television talk shows encouraged them to get a mammogram and to maintain compliance with the screening. Media companies and healthcare system entities are increasing their collaborative efforts to provide information to the viewing and listening public. Apparently, such programs are reaching the populace and having an effect. Expanding such efforts and increasing use of public service announcements may be helpful in reaching those women who have not yet taken advantage of the opportunity available to them to utilize mammography.

It may be most beneficial to invite adherent women to serve as role models beyond family and friends. Strengthening programs that encourage women to work with a "buddy" to schedule and keep mammography appointments or that involve pairing women needing mammograms with ones who have had them for transportation and escort may help mobilize women who do not yet utilize mammography. Certainly, role models are valuable; the women indicated that they look to others for encouragement and that they return the encouragement for others as well. Continuing to encourage women to tell their stories of success, not only within their families but also in and beyond their communities, may influence others to see that the effort to obtain a mammogram is well worth it.

Since several personal barriers stem from healthcare system procedures, many can be eliminated by appropriate modifications within the system. The woman's physician or medical director can eliminate those that interfere with mammography compliance, lessening the burden women carry in their attempts to manage their health. In the earlier report on healthcare system barriers, we indicated that increasing simple direct

physician-patient messages and interpersonal sensitivity might provide the most important differences in adherence. The physician can also manage the confidentiality of patients' records and appointments, the efficiency of the mammography procedure itself as well as reporting the findings, and maintain the appearance of the mammography facility such that the experience is more pleasant.

While the procedure may be uncomfortable, it does not have to be painful. The results can be given at the time of the procedure, thereby decreasing, perhaps even eliminating, the stress experienced with a long waiting period. Sensitizing mammography staff to the women's perspectives or manner in

which they are treated when they come in for a mammogram can lead to positive experiences that these women can share with others.

These women, empowered by awareness and knowledge of risk factors, knowledge and trust in detection and treatment processes of breast cancer, personal responsibility, and personal pride and satisfaction, overcame challenges posed by daily choices about priorities. The partnering of women who are positive about primary and secondary prevention with those who are nonadherent may prove an important element for increasing the level of mammography adherence for poor and underserved women in urban America.

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EMPOWERING FACTORS FOR REGULAR MAMMOGRAPHY SCREENING IN UNDER-SERVED POPULATIONS: PILOT SURVEY RESULTS IN TENNESSEE

Background: Mammography screening can reduce breast cancer burden, however it continues to be underutilized by low-income women even though their health insurance provides free mammograms. While a vast majority of eligible women in Tennessee do not receive the free mammograms available to them, 25% of women with comparable backgrounds do.

Objective: To describe the influences that may have led these women to adhere to mammography screening guidelines in order to develop a case-control study for further research.

Design: Healthcare workers conducted personal interviews on mammography knowledge, attitudes, and behaviors.

Setting: In-home.

Participants: All were members of the Managed Care Organization Access MedPlus with incomes <200% above poverty. All were adherent to mammography guidelines per medical records. Fifty-eight respondents were Black, 27 were White, and all were at least 40 years old.

Results: Participants recognized breast cancer risk factors, warning signs, and the importance of early detection to survival. 75% reported a family history of any cancer type, 77% knew someone who had breast cancer, and 52% knew someone who had died from it. These women expressed that screening strongly reassured them. Willing to work with their doctors, they trust the health system's ability to treat breast cancer and are generally satisfied with their health care.

Conclusions: Repeat regular mammography screening is positively associated with higher knowledge about risk factors, warning signs, screening, and treatment. Trust in the healthcare system, ability to work with physicians, and support by family and friends lead low-income, adhering women to be proactive in seeking mammography screenings. (*Ethn Dis*. 2005;15:387-394)

Key Words: Breast Cancer, Empowering Factors, Mammography, Patient Compliance, Under-served

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INTRODUCTION

The present paper describes the profile of under-served women who are adherent to repeat mammography screening guidelines. The findings are drawn from the analysis of results from an empowering factors pilot survey that followed qualitative research conducted within the same population and provided direction for a hypothesis-driven, statewide survey currently in progress.

Approximately 40,000 women will die of breast cancer in 2004/2005, making it the second-leading cause of cancer death among women in the United States.¹ One in every eight American women will develop the disease during her lifetime.² The death rate from breast cancer could be decreased significantly through regular mammography screening for early detection and subsequent treatment.³ Although some research has questioned the value of mammography screening,⁴ most well-designed clinical studies support the benefit of mammography use,⁵ and nearly all North American health organizations recommend regular mammography screening for women 40 years of age and older.

Despite numerous research and intervention efforts,⁶⁻¹¹ all groups of eligible women, and especially low-income, minority, and elderly women, un-

derutilize mammography screening¹² with estimates that the rate could be as low as 21% for under-served populations.¹³ While the *Healthy People 2010* mammography screening objective (70% overall adherence) had nearly been achieved in 2000 for Black and White women, with 68% and 71% adherence,³ respectively, much work remains to be done for the poor (55%) and undereducated (57%) of all races.¹⁴ Studies have found that approximately 20% of eligible women adhere to screening guidelines during a contiguous two- or three-year period,¹⁵⁻¹⁹ and though research shows that 19% had received four mammograms in five years, <1% received five in that time period.²⁰⁻²²

Efforts to improve mammography rates have had varying degrees of success, but they have not appropriately addressed the actual needs of target groups, particularly in under-served populations.²³ Although lack of insurance was believed to be the most common obstacle, recent changes in healthcare insurance options have effectively removed this barrier. These changes, however, have had little effect on screening mammography rates. Most low-income women of the recommended age bracket do not seek free mammograms.²⁴ However, a small group of low-income women, accounting for slightly more than 25%, have obtained regular mammograms or adhere to screening recommendations. Although multiple studies, indeed most social health studies, have examined why certain populations fail to practice healthy behaviors,^{23,25-27} little attention has been paid to how some women, such as the 25% mentioned above, are successful, despite

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... all groups of eligible women, and especially low-income, minority, and elderly women, underutilize mammography screening¹² with estimates that the rate could be as low as 21% for under-served populations.

barriers to getting regular mammograms.

The present study has its theoretical roots in "positive deviance" research,²⁸⁻³⁰ which focuses emphasis upon populations that deviate positively from an expected norm. In health research, these populations adhere to healthy behaviors, though they exist within sociodemographic groups that are generally non-compliant, predominantly the poor and under-served. We conducted in-depth focus group discussions with under-served women adherent to repeat mammography and gathered information about their facilitating factors in overcoming barriers to regular mammography screening. Guided by the results of this focus group study, published elsewhere,³¹ we developed a questionnaire by incorporating the focus group findings and choosing aspects from the Health Belief Model³² and Precede-Proceed Model^{32,33} as appropriate to form a theoretical basis for exploring what factors empower these under-served women to be successful in their health-seeking behaviors, including mammography screening. This refined questionnaire was administered in a pilot survey of 85 under-served women, all members of the Managed Care Operation (MCO) Access Med Plus, whose records indicated adherence to mammography screening guidelines.

Table 1. Demographic, health, and family history of cancer characteristics by race (%)

Demographics	White n = 27	Black n = 58	Total N = 85*
Education (mean ± SD)	10.8 (2.6)	9.7 (5.1)	
No formal education	18.5	3.4	8.2
Less than high school	29.6	43.0	38.9
High school	29.6	44.8	40.0
More than high school	22.2	8.5	13.0
Income			
≤\$10,200	14.3	21.6	19.4
\$10,201-\$15,600	57.1	62.7	61.1
≥\$15,601	28.5	15.7	19.4
Employment status			
Unemployed	63.0	63.8	63.5
Employed part-time	18.5	15.5	16.4
Employed full-time	18.5	20.6	20.0
Marital status			
Married	59.3	17.5	31.0
Single (never married)	7.4	19.3	15.5
Divorced	18.5	29.8	26.2
Legally separated	0.0	14.0	9.5
Widowed	14.8	19.3	17.9

* Percentages calculated from variability of response rate, not total N.

METHODS

Participants

The empowerment factors study targets under-served, low-income women who were members of the TennCare program, the State of Tennessee's health-care finance reform program that superseded Medicaid in 1994. TennCare members include women and families up to 200% above the poverty level. For example, a maximum annual income of \$36,200 makes a family of four eligible for membership benefits.³⁴ Uninsurable individuals are eligible to buy into the program as well. For the pilot survey, we selected women from the target populations who satisfied all the following criteria: 1) age 40 and above and enrolled in the TennCare program; 2) members of the Access MedPlus managed care organization that managed portions of Medicaid benefits through Tennessee's TennCare program; 3) adherent to screening mammography guidelines for four years prior to the study according to TennCare mammo-

gram claims data; and 4) residents of the state of Tennessee.

Questionnaire

In order to conduct a quantitative study on our target population, we developed a questionnaire based on the results of the focus group discussions from the qualitative study^{31,35} and incorporated questions from the Cancer Supplement of the National Health Interview Survey and Behavioral Risk Factors Surveillance Survey. Questionnaire components included sociodemographics, cancer awareness, knowledge of risk factors, health-seeking behaviors/practices, barriers, empowering factors, and open-ended descriptions of how respondents overcame difficulties in getting regular mammograms.

Interview Process

Permission for gathering patient information was obtained from the TennCare Bureau, Medical Director and Health Services Committee of Access MedPlus, as well as from the Meharry

Table 2. Healthcare access, utilization, satisfaction and health risk characteristics (%)

	White n = 27	Black n = 58	Total N = 85†
I have a regular healthcare provider	100.0	94.8	96.5
Usual place of care‡:			
Doctor's office	88.9	81.0	83.5
Doctor's office and emergency room	7.4	22.5	17.7
Emergency room only	3.7	3.4	3.5
Preventive screening			
Regular check-up	76.9	86.0	83.1
Blood pressure	100.0	100.0	100.0
Blood sugar	85.2	77.6	80.0
Cholesterol	77.8	74.1	75.3
Pap smear	69.2	84.2	79.5
Eye exam	81.5	84.5	83.5
Dental exam	55.6	47.4	50.0
Hearing exam	22.2	22.8	22.6
Rectal exam	53.8	57.1	56.4
I am satisfied with the service			
Doctor interested in my health§	96.3	87.7	90.5
Doctor answers my questions	61.5	76.5	71.4
Doctor listens	46.2	66.7	59.7
I am respected by the doctor and staff	69.2	74.5	72.7
It is easy to get an appointment	53.8	60.8	58.4
Doctors take their time when explaining medical procedures	34.6	58.8*	50.6
The location of my last mammogram was convenient	84.6	85.9	85.5
I feel better that my mammography records are kept in one place	88.9	94.8	92.9
Overweight	100.0	96.6	97.6
Interest or participation in weight loss program	73.1	63.8	66.7
Exercises regularly	40.7	53.4	49.4
Interest or participation in exercise program	37.0	41.4	40.0
Current smoker/tobacco user	33.3	55.2	48.2
Using prescription drugs	56.3	45.9	49.1
Previous other breast condition	96.3	87.9	90.6

* P<.01.

† Percentages calculated from variability of response rate, not total N.

‡ Multiple responses were possible; total is more than 100%.

§ Subset applies to those satisfied with service. White N = 26, Black N = 51.

Medical College Human Subjects Review Board. Informed consent was obtained from all participating women. Our study health educator/coordinator trained community health outreach workers from Access MedPlus who, supervised by regional team leaders, gathered data through personal interviews during home visits.

Statistical Methods

For this segment of the empowering factors study, we selected a stratified, random sample of 90 women from a pool of 5,518 women in the target group. Stratification considered race,

age, and regional distribution. After the survey, we entered data into an MS Access database and exported them to SPSS version 11³⁶ for analysis. A descriptive approach was used to categorize responses from individual survey items. To compare the data between Blacks and Whites, we used independent chi-square or *z* tests to explore any significance differences. A conventional *P* value of .05 or less determined significance. Since racial differences were minimal to nonexistent, we primarily report overall results in this paper. However, we highlight racial differences when distinct or significant.

RESULTS

Sample Demographics

Demographics are shown in Table 1. Of the 90 women asked to participate, 85 completed the questionnaire, a response rate of 94%. Twenty-seven (32%) of the respondents were White, and 58 (68%) were Black. Within this group, a few significant differences were observed between Blacks and Whites concerning demographic characteristics. The difference in mean educational attainment was not significant, though some differences stand out when grouped by grade level attainment. Ta-

REPEAT MAMMOGRAPHY AMONG UNDER-SERVED WOMEN - Ahmed et al

Table 3. Critical life events, knowledge, attitudes, and screening practices (%)

	White n = 27	Black n = 58	Total N = 85†
<i>Critical life events and family history of cancer</i>			
I personally know someone who had breast cancer	68.0	81.0	77.1
I personally know someone who died from breast cancer	32.0	60.3*	51.8
Relative with breast cancer	60.0†	27.3	37.5
First-degree relative	35.0*	13.6	20.3
Relative with cervical cancer	15.0	20.5	18.8
Relative with cancer (any type)	74.1	75.9	75.3
<i>Recognized risk factors</i>			
Family history (mother or sister)	92.6*	77.2	82.2
Having relatives who had breast cancer increases the likelihood of getting the disease	84.0*	53.4	62.6
Age (over 50 more likely)	73.1	59.7	63.9
The disease strikes only older people	4.0	5.1	4.8
Diet (high fiber food)	48.0	53.5	51.8
What people eat or drink doesn't affect whether they will get breast cancer	16.0	25.0	22.3
<i>Identified warning signs</i>			
Lumps	100.0	93.9	95.9
Pain/soreness in breast	89.5	97.5	94.9
Discharge from nipple	94.4	92.9	93.5
Swelling or enlargement of breast	90.0	92.3	91.7
Change in shape of breast or nipple	100.0	90.5	93.5
I believe if I had breast cancer I would be able to look at my breast and know	22.2	10.5	14.3
Knows how to examine breasts for lumps	96.2	94.8	95.2
Practices monthly breast self exam	53.9	61.4	59.1
Knew correct frequency for CBE (yearly)	81.5	70.7	74.1
Last clinical breast exam			
Within a year	77.8	91.4	87.1
Between 1 and 2 years ago	14.8	5.2	8.2
Between 2 and 5 years ago	7.4	3.4	4.7
Knew recommended frequencies for mammography (<50 once every two years/≥50 yearly)	96.2	96.6	96.5
<i>Recollection of last mammogram</i>			
Within a year	74.1	84.5	81.2
Between 1 and 2 years ago	25.9	10.3	15.3
More than 2 years	0.0	5.1	3.6
<i>Primary reason for most recent mammogram</i>			
Self interest/initiation	45.1	51.7	49.5
Doctor recommended	37.0	27.6	30.6
Breast problem	15.4	17.2	16.5
Had cancer	3.7	1.7	2.4
<i>Severity and susceptibility</i>			
Breast cancer is a very serious problem	96.3	81.0	85.7
Any woman is likely to get breast cancer	96.2	89.3	91.5
Many women are concerned about getting breast cancer	96.3	86.2	89.4
I worry about getting breast cancer	55.5	43.1	47.0
Breast cancer is likely in my lifetime	44.4	18.9	27.1
Mammography is not needed if breast cancer does not run in the family	7.7	1.7	3.6
I am too healthy to get breast cancer	0.0	3.4	2.4
<i>Perceived benefit</i>			
If breast cancer is found and treated early it can be cured	96.3	91.4	92.9
If treated early one is more likely to return to a normal life	92.0	94.5	93.8
Getting proper treatment is easy	80.0	76.8	77.8
Cancer treatment is worth going through if there is at least a small chance of saving my life	96.2	94.7	95.2
Having a check-up once a year is worth the time and effort	96.1	94.7	95.2

* P<.01; † P<.001.

† Percentages calculated from variability of response rate, not total N.

ble 1 shows that 3% of Blacks had no formal education compared to approximately 19% of Whites. Approximately 9% of Blacks continued education past high school, compared to 22% among Whites.

Nineteen percent of the women had incomes at or less than \$10,200 a year: 22% of Blacks and 14% of Whites. Sixty-one percent had incomes between \$10,200 and \$15,600. Nineteen percent had incomes above \$15,600: 16% of Blacks and 29% of Whites. Employment rates were similar across race; of the 85 participants, approximately 64% were unemployed, 16% were employed part-time, and 20% were employed full-time.

Overall, 16% of the participants were single, and approximately 53% were either divorced, legally separated, or widowed. Approximately 60% of Whites were married compared to 18% of Blacks.

Healthcare Access, Utilization, and Satisfaction

Virtually all (97%) of our women reported that they had a regular provider (Table 2); most (83%) received health care in a doctor's office, with approximately 18% saying they also go to an emergency room. Approximately 4% went to an emergency room exclusively. In the past 12 months, all participants reported they had their blood pressure checked, as well as other health examinations: most (>75%) had an eye exam, a regular check-up, a blood sugar test, a Pap smear, and a cholesterol test.

Although significantly more Whites (65%) than Blacks (40%, $P<.01$) found obtaining an appointment difficult, nearly all (91%) indicated they were satisfied with the health service provided, and 86% indicated the doctor takes time when explaining medical procedures. Of those reporting satisfaction with services, most felt respected by the doctor and the staff (58%), that the doctor listens (73%), shows interest in their health (71%), and answers their

Table 4. Barriers faced in mammography screening (%)

	White n = 27	Black n = 58	Total N = 85†
Fatalism			
Getting the disease is a death sentence	12.0	20.0	17.6
It's too late for me to start worrying about getting breast cancer	8.0	8.9	8.6
Getting treated is worse than having breast cancer	16.0	17.9	17.3
There is very little a person can do to reduce their chances of getting cancer	42.3	38.6	39.7
If women have a lump in their breast it is almost always breast cancer	3.7	6.9	5.9
Fear			
I have doubts about some things doctors say they can do for me	26.9	58.1*	43.8
Having an operation for the disease can expose it to air and cause it to spread	40.0	55.3	50.6
Exposure to radiation during a mammogram concerns me	15.4	57.9†	44.6
I am usually afraid of what the doctor will find	26.9	26.8	26.8
If I had the disease, I would rather not know	24.0	12.3	15.8
Getting tested for breast cancer is painful	20.0	35.8	30.9
The chance of finding something keeps me from seeking medical advice	0.0	6.9*	4.8
I am afraid of the pain I may feel when I visit a healthcare facility	8.0	12.3	11.0
Doctors make me feel uncomfortable	16.0	5.2	8.4
Breast exams embarrass me	15.4	7.1	9.6
Cost			
The cost of medical care keeps me from going to the doctor	11.5	13.8	13.1
I have delayed getting treatment due to a high deductible	7.4	1.7	3.5
Treatment costs so much that I probably can't afford it	36.0	41.1	39.5
I would seek more medical services if they were not expensive	44.0	47.3	46.3
Not having transportation makes it difficult to keep medical appointments	4.0	22.8*	17.1
System			
It takes too long to get an appointment	28.0	24.1	25.3
I would have a mammogram only if my doctor recommended it	30.8	37.5	35.4
It is difficult to get time off of work to see a doctor	13.6	3.8	5.3
I prefer female doctors	44.4	32.8	36.5
I have delayed seeking medical care because of worries over insurance	8.7	9.1	9.0
I receive inferior treatment because of my race	0.0	1.7	1.2
I receive inferior treatment because I have little money	3.7	10.3	8.2

* P<.01; † P<.001.

† Percentages calculated from variability of response rate, not total N.

questions (60%). Ninety-three percent believed that the location of their last mammogram was convenient, and nearly all (98%) felt better that their mammogram records are kept in one location.

Risk Characteristics

With regard to personal health risks, about half (52%) indicated a previous breast condition other than cancer (Table 2). Nearly all (91%) were using pre-

scription drugs. Most (67%) believed they were overweight, with not quite half (49%) indicating they were interested in participating in a weight-loss or exercise program. Forty-nine percent of the respondents reported they currently used tobacco.

Critical Life Events and Family History of Cancer

Fifty-two percent of our respondents knew someone who had died of cancer

(Table 3), Blacks significantly more so than Whites (60% to 32%, $P<.01$). Though 38% overall reported a relative with breast cancer, racial differences were highly significant ($P<.001$); 60% of White women, compared to 27% of Black women, reported having a relative with breast cancer. Additionally, 35% of Whites and 14% of Blacks ($P<.01$) had a first-degree relative with breast cancer.

Significantly more Whites than Blacks understood that having relatives with breast cancer is associated with higher personal risk (84% of Whites and 53% of Blacks, $P<.01$) and recognize breast cancer in a mother or sister as a personal risk factor (93% of Whites and 77% of Blacks, $P<.01$). Overall, 64% knew that women older than 50 years are at a higher risk. Across an array of indicators, 92% to 96% of the respondents could correctly identify warning signs of breast cancer.

Breast Cancer Screening Behavior

Approximately 50% of the women initiated their most recent mammogram, while 31% said that the most important reason for it was a doctor's recommendation (Table 3). Nearly all respondents reported they know how to examine their breasts for lumps, knew the recommended mammography intervals for their age group, and had a clinical breast exam in the past 12 months.

Perceived Severity and Susceptibility

Most (86%) of our pilot women considered breast cancer a very serious health problem for women and believed (92%) that any woman is likely to get breast cancer. While 89% believe many women are concerned about getting breast cancer, less than half (47%) of the respondents said they, personally, were worried about it, and 27% thought breast cancer is likely in their lifetime.

Perceived Benefit

When asked about their trust in detection and treatment methods, about

Table 5. Underlying factors empowering women for screening (%)

	White n = 27	Black n = 58	Total N = 85†
<i>Priority concerns</i>			
Health	55.6	62.1	60.0
Finance and money	37.0	33.3	34.5
<i>Self-efficacy/locus of control</i>			
Primary trust for health advice			
Self	29.6	28.1	28.6
Doctor or nurse	66.7	50.9	56.0
I am aware of health services in my community	88.4	84.2	85.6
I would ask the doctor questions even though he/she is busy	92.0	89.4	90.3
I am not ashamed of my body	80.0	79.3	79.6
There are things I can do to prevent getting breast cancer	68.0	45.7	52.4
It is up to me and my doctor to protect me from cancer	100.0	100.0	100.0
Having a mammogram reassures me that I am protecting my health	100.0	100.0	100.0
<i>Source of support</i>			
Having regular mammograms is very important to my family	96.0	93.1	94.0
Having regular mammograms is very important to my friends	84.0	79.3	80.7
I am able to talk about health issues with my friends	92.0	98.3	96.4
My spouse/partner encourages me	75.0*	37.5	48.5
<i>First learned about mammography from</i>			
A healthcare worker or facility	69.2	82.1	78.0
Friends or family	15.3	8.9	10.9
Advertisements or reading material	15.3	8.9	10.9

* P<.01.

† Percentages calculated from variability of response rate, not total N.

93% of the respondents said that breast cancer could be detected early and cured, agreeing that early detection and treatment could lead to the return of a normal life. Seventy-eight percent believed that proper treatment for the disease is easy and 95% believed that cancer treatment is worth going through if there is a small chance that it would save their life, feeling that yearly check-ups are worth the time and effort.

Fatalism and Fear

Of the participants, 40% believed a person could do little to avoid cancer, and 18% believed that getting breast cancer is a death sentence (Table 4). When expressing fears, 58% of Blacks and 27% of Whites ($P<.01$) said they doubt what doctors say they can do for people. Half of the respondents believed that having surgery could expose cancer to the air and cause it to spread. Highly significant differences were found be-

tween Blacks' (58%) and Whites' (15%, $P<.001$) being concerned about exposure to radiation during mammography. Twenty-seven percent agreed that they are usually afraid of what the doctor may find, but 83% would rather know if they had breast cancer. Eight percent felt that doctors make them uncomfortable, and 10% felt embarrassment from breast exams.

System Barriers and Cost

Approximately one third of the women prefer female doctors and would only get a mammogram if their doctor recommended it. Perceived cost is an issue for approximately 40% who said they probably cannot afford treatment or that medical services are expensive. Transportation is a significant issue for Blacks; 23% said not having it makes keeping medical appointments difficult, while 4% of Whites found it a barrier ($P<.01$).

... They [the under-served women of the study] are empowered by the benefits of screening and supported by their friends and families to deal with the barriers they encounter.

Empowering Factors

Most of the respondents rated health as primary among their personal priority concerns and rated it primary twice as often than the next most cited category: finance and money (Table 5).

On questions related to self-efficacy and locus of control, all believed it is up to them to work with their doctors to protect themselves from cancer, and having a mammogram reassures them they are doing their part. Having regular mammograms is also important to their families and their friends. Overall, approximately 38% of Black and 75% of White respondents stated that their spouse or partner encourages them to obtain a mammogram ($P<.01$). Of those married, 86% of Whites ($n=14$) and 40% of Blacks ($n=10$) reported being encouraged by their spouses. Nearly 80% said they first learned of mammography through their doctor, nurse, or healthcare facility, approximately 11% learned of mammography through friends and family, and another 11% from advertisements and reading material.

Discussion

Under-served women share many similar concerns and competing daily priorities. However, despite difficulties, some women seek regular repeat mammography screening. Our women are well informed; knowledgeable about the

REPEAT MAMMOGRAPHY AMONG UNDER-SERVED WOMEN - Ahmed et al

risk factors, warning signs, and the importance of early detection; and trust their ability to work with the healthcare system to reduce the risk of getting cancer. They are alert to their perceived susceptibility, a perception possibly driven by critical life events. They are empowered by the benefits of screening and supported by their friends and families to deal with the barriers they encounter.

The empowering factors pilot study survey yielded responses similar to the results of our focus group interviews for this population.^{31,35} Based on these results, we are currently conducting a statewide survey of insured, low-income women for a case-control analysis design comparing adherent and nonadherent women. We anticipate that Tennessee women who overcome the barriers to screening have several characteristics in common with those in our focus groups and pilot study, and we expect to uncover which modifiable characteristics their nonadherent counterparts do not share. More specifically, we hypothesize that repeat regular mammography screening is positively associated with higher awareness, knowledge (about risk factors, warning signs, and screening and treatment procedures), trust in the healthcare system, the ability to work with physicians, and empowerment by family and friends.

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REPEAT MAMMOGRAPHY AMONG UNDER-SERVED WOMEN - Ahmed et al

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**OVERCOMING BARRIERS TO SCREENING
MAMMOGRAPHY IN AN UNDERSERVED
POPULATION—INSIGHTS FROM THE EXPERIENCE
OF COMPLIANT UNDERSERVED WOMEN**

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Breast cancer is the second leading cause of cancer mortality in U.S. women. Recent declines in breast cancer mortality have not significantly benefited underserved populations mainly because of their under-utilization of cancer screening. Providing insurance and offering free screenings did not significantly increase mammography utilization among underserved women. However, a quarter of low income underserved women received routine mammography despite facing numerous barriers. This study attempted to identify barriers to mammography and explore factors that empowered these underserved women to overcome those barriers.

This study used in-depth focus group discussion to gather information about the facilitating factors and barriers to mammography from experiences of underserved women. We used constructs from the Precede-Proceed model as a general guide to organize focus group discussions. Eight focus groups were conducted with underserved women ages 40 years and older, had no history of breast cancer, had no professional involvement with health care delivery and received regular screening mammography.

Eighty percent of these participants had at least 12-grade education, and 75% had an annual income of less than \$10,000. Forty responses on health care *system barriers* were classified as related to: *Physicians* (referral, physician-patient relationship, and gender of the physician); *Staff* (demographics, patient-communication, manners, handling breasts, discomfort, and technical expertise); *Management* (waiting for: appointment, to be seen and test result, complicated paper-work, confidentiality, and record-keeping); and *Facility* (physical quality, location, equipment comfort and reliability). Thirty responses were categorized as *personal factors* that help overcome the barriers are: *Knowledge* of risk factors (age and family history); *knowledge and trust* in early detection and treatment process; *personal responsibility* about own health and well being; and *pride and satisfaction* with ones own action and body.

We conclude that knowledge and motivation played the major role to overcoming personal and system barriers. The system barriers could be addressed by orienting physicians to provide simple-effective-direct messages, training staff on job skills, interpersonal sensitivity, observance of confidentiality; reducing waiting time for appointment and to be seen, reading test results and communicating to patients; maintaining healthy environment in the facility.

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FOR THE PATIENT

The health problems of CKD can be prevented or delayed at the earlier stages of the disease. This can be done by blood and urine tests. In some cases an x-ray of the kidneys is helpful. Blood sugar control in diabetes, blood pressure control, and a lower protein diet may help many CKD patients. Also treating high blood lipids, obesity, and high levels of protein in the urine. CKD patients should not smoke and should avoid the use of heavy metals, such as lead. The use of illegal drugs, herbs, and skin creams that are not approved can make kidney disease worse.

Nephrologists, doctors who treat kidney disease, often do not see CKD patients until it is too late to slow the disease. If

a patient reports to a nephrologist early, there is a better chance something can be done. CKD patients should visit a nephrologist when a blood test shows that the kidney is still working at one half of usual.

We believe that the public should know more about the risk factors of kidney disease and options to treat it. Also, we recommend that a wide-scale health education and screening campaign for kidney disease be put in place for people around the world.

Source: The Global Burden of Chronic Kidney Disease and the Way Forward

CO Alebiosu, FWACP; OE Ayodele, FWACP

REGULAR MAMMOGRAPHY SCREENING: MAKING IT MATTER

More than 40,000 women will die of breast cancer in 2005. One in every eight American women will develop the disease during her lifetime. Finding out about the disease at an early stage by mammography and getting early treatment can save lives. Many women do not know they can get this screening for free. Our study set out to find out ways that we could help women see the important steps that can be taken to prevent breast cancer.

We conducted a survey of low-income Black and White women 40 years old and older who used their public health insurance for free mammograms. They were asked to share information with us so we could learn how and why they got mammograms on time. This information may produce ideas about how to work with women who are like them but who do not get mammograms.

Many of these women reported having some breast condition other than cancer, being overweight, or being smokers. Nearly all had a regular doctor and received ongoing health care in the doctor's office. They said they were satisfied with their healthcare and that the doctor took time to explain medical procedures to them. Most felt respected by their doctor and the staff and said the doctor listens, shows interest in their health, and answers their questions. They also believed that the location of their last mammogram was convenient. Most felt better that their mammogram records are kept in one place.

The women were concerned about their breast health. They knew breast cancer risk factors, warning signs, and the importance of early detection. Many reported a family history of cancer and knew someone (sometimes a mother or sister) who had breast cancer or who had died from it. Women felt getting a regular mammogram gives them a strong sense of confidence and they have support from family and friends to do so. The women are willing to work with their doctors and feel they are doing their part when they get regular mammograms. They

trust the healthcare system to treat breast cancer if it is found. Although many feel there is little one can do to avoid cancer, they would rather know if they had breast cancer. They say their yearly exams are worth the time and effort because their health is their highest personal priority.

Based on our results, we encourage women to:

- Get regular and repeated mammograms.
- Understand that their participation in their healthcare is important and necessary.
- Ask their doctor and other healthcare team members the questions they have about the mammogram.
- Ask their family and friends to help them get mammograms on a regular basis.

Our recommendations for the healthcare system are to:

- Provide women with information on breast cancer risks and prevention methods.
- Encourage women to see themselves as partners with their doctor to maintain good breast health.
- Encourage patients' family members to support regular patient mammograms.
- Maintain mammogram records in or near the doctor's office.
- Develop schedules and staffing that allow discussions of mammogram details.

Source: Empowering Factors for Regular Mammography Screening in Underserved Populations: Pilot Survey Results in Tennessee

Nasar U. Ahmed, PhD; Jane G. Fort, PhD; Jared D. Elsey, BA; Yigzaw Bely, MS, PAHM

Appendix B
(Pilot Survey)

**Empowering Factors Among Breast Cancer Screening Complaint
Underserved Populations
Semi-Structured Guide Instrument**

Meharry Medical College

2000

*New Questions Added

Access...MedPLUS Code _____ Project Code Number:

Date of Interview (MM/DD/YY): _____

Location of Interview _____

Start time of interview _____

Has participant signed the Informed Consent? Yes or No

End time of interview _____

A. General Information

First, I would like to ask you some general questions

1. What month and year were you born?

2. How many people are in your family?

3. In your family, how many adults age 18 or older?

4. In your family, how many children under age 18?

5. Do you consider yourself...?

White

1

Black

2

Hispanic

3

Other (Specify here)

4

7. What was the highest grade of school you completed?

8. Are you?

Married (currently)

1

Single (never married)

2

Divorced

3

Widowed

4

Legally separated

5

Refused

88

9. Has your marital status affected your ability to seek health care?

Yes

1

If yes please describe:

No

2

10. What is your gross monthly income?

Less than \$425

1

\$426—\$851

2

\$851--\$1300

3

\$1300—2100

4

\$2100+

5

Don't Know

6

Refused

88

A. General Information Continued

11. What is your spouse/partner's gross monthly income?

Less than \$425

1

\$426—\$850

2

\$851--\$1300

3

\$1301—\$2100

4

\$2100+

5

Don't Know

6

Refused

88

12. Are you employed?

Yes

1

No

2

13. What do you do for a living?

14. Are you working?

Full Time

1

Part Time

2

15. If you are not working, what would you say are the reason(s) for not working? (Circle all that apply)

Believes no work available

1

Laid off

2

Couldn't find any work

3

Disability and other handicap

4

Lacks necessary schooling, etc

5

Lack of transportation

6

Can't arrange child care

7

In school or training

8

Retired

9

Family responsibilities

10

Currently looking for work

11

Ill Health

12

Other (specify here)

13

A. General Information Continued

16. What kind of insurance do you have?

Medicaid

1

Medicare

2

TennCare

3

If TennCare, which MCO

4

HMO (specify)

5

Other – specify here:

6

17. Does your insurance pay for most of the cost of a doctor's visit?

Yes

1

No

2

18. How much is your co-payment?

\$

19. Do you know your Managed Care Organization's (MCO) transportation provider?

Yes

1

No

2

N/A

3

20. Do you currently have a regular medical doctor you usually go to if you are sick or need advice about a medical problem?

Yes

1

No

2

21. Is this doctor the same as your assigned primary care provider?

Yes

1

No

2

22. If no, what type of doctor do you usually see?

**23. Are you satisfied with all the services your doctor or health care provider gives you?
(if no skip reasons for satisfaction)**

Yes (If yes go to next applicable question)

1

No

2

Not sure

3

A. General Information Continued

24. If you were satisfied by your doctor's services, what are the main reasons for your satisfaction?

CHECK ALL THAT APPLY (DO NOT READ ALOUD)

Doctor makes it easy to get an appointment

1

Less waiting time

2

Doctor gives fast services

3

Doctor takes my phone calls

4

Doctor seems interested in my health

5

Doctor answers my questions about health care

6

Doctor always listening to my concerns

7

Doctor's staff respects me and is friendly

8

Other reasons (specify)

9

25. If you were not satisfied by the services provided to you by your doctor or health care, what are the main reasons for your dissatisfaction? Check All That Apply. (Do Not Read Aloud).

Difficult to have an early appointment

1

Long waiting time

2

Long or extended time in the office

3

Cannot get help on the phone

4

Doctor does not seem interested in my health

5

Doctor does not answer my questions about health care

6

Doctor not always listening to my concerns

7

Doctor's staff do not respect me

8

*Unable to personally speak to the doctor or provider

9

*Doctor or healthcare practitioner too old 10

*Doctor or healthcare practitioner too young 11

*Doctor is from a different race 12

Other reasons (specify) 13

A. General Information Continued

26. Where do you usually go when you are sick or need advice about your health?

Nowhere 1

Doctors office or private clinic 2

Company or school health clinic 3

HMO (health maintenance organization) 4

VA hospital or clinic 5

Community health clinic 6

Hospital outpatient clinic 7

Hospital emergency room 8

Some other places (describe) 9

27. During the past 2 years, have you delayed seeking medical care because of worries over insurance or cost?

Yes 1

No 2

A. General Information Continued

28. How worried or concerned are you about

Very
Much Some A
Little None N/A Persona
1 In
General

(1) (2) (3) (4) (5) (6) (7)

a. Health 1 2 3 4 5 6 7

b. Marriage/relationships 1 2 3 4 5 6 7

c. Children 1 2 3 4 5 6 7

d. Finance/Money 1 2 3 4 5 6 7

e. Illness or death in family 1 2 3 4 5 6 7

f. Job/Work 1 2 3 4 5 6 7

g. Addiction/Substance 1 2 3 4 5 6 7

abuse	1	2	3	4	5	6	7
h. Violence							
i. Others (Specify)	1	2	3	4	5	6	7

29. Which are the 3 things that worry you most, starting with the most important as number 1?

- a.
- b.
- c.

A. General Information Continued

30. Do you take prescription medication on a regular basis?

Yes

1

No

2

31. During the past 12 months, was there anytime when you needed a prescription medication but could not afford it?

Yes

1

No

2

32. Do you think you need to have regular physical exams?

Yes

1

No

2

- a. If YES, what are the reasons you think you need a physical exam?

Specify here:

- b. If NO, what are the reasons you think you don't need regular physical exams?

Specify here:

A. General Information Continued

33. During the past 1 or 2 years, have you done any of the following health prevention activities (check all that apply)?

	Test Done	Reason for Test
<i>Blood pressure checked</i>	1.	
Blood sugar checked	2.	
Cholesterol checked	3.	
Skin cancer screening	4.	
Pap smear	5.	
Eye examination	6.	
Hearing test	7.	
Complete physical	8.	
Dental checkup/cleaning	9.	
Rectal exam	10.	
Physician breast exam	11.	

Reasons for test being done. Use assigned number in previous question.

- Part of a routine check up 1.
- Because of a related problem (or risk factors) 2.
- Because I had this problem 3.
- Because a family member had this problem 4.
- My doctors asked me to do so 5.
- My friends suggested me 6.
- Other (specify here): 7.

34. Do you have any illness, physical disability, or handicap that hampers day to day activities?

Yes 1

If yes, specify here:

No 2

B. Health Risk Factors

1. How interested are you in getting help in each of the following activities?	Not interested (1)	Somewhat interested (2)	Very interested (3)	Already enrolled or participating Yes 4 or No 5	N/ (€)
--	-----------------------	----------------------------	------------------------	--	--------

a. Losing weight

1	2	3	4	5
---	---	---	---	---

a. Exercise

1	2	3	4	5
---	---	---	---	---

b. Stop smoking

1	2	3	4	5
---	---	---	---	---

c. Stop drinking

1	2	3	4	5
---	---	---	---	---

d. Healthy eating/Nutrition

1	2	3	4	5
---	---	---	---	---

e. Child rearing/parenting

1	2	3	4	5
---	---	---	---	---

f. Stress and emotional problems

1	2	3	4	5
---	---	---	---	---

g. Career/Job training

1	2	3	4	5
---	---	---	---	---

h. Cancer screening

1	2	3	4	5
---	---	---	---	---

2. Has any doctor ever advised /told you about the following:	Yes (1)	No (2)	Refused (88)
---	------------	-----------	-----------------

a. Diet

1	2	88
---	---	----

b. Exercise

1	2	88
---	---	----

c. Smoking

1	2	88
---	---	----

d. Cancer screening

1	2	88
---	---	----

e. Eye exam

1	2	88
---	---	----

f. Heart disease	1	2	88
g. Stroke	1	2	88
h. Cholesterol	1	2	88
i. Diabetes	1	2	88
j. Stress	1	2	88

B. Health Risk Factors Continued

2. Please answer yes or no to the following questions:	Yes	No	Refused
	(1)	(2)	(88)
3. Do you think that you are overweight?	1	2	88
4. Do you exercise regularly?	1	2	88
5. If yes, what activities?			

6. If you do exercise, how often do you exercise?

Every day	1
1 to 3 times a week	2
At least once a month	3
Don't know	4
Refuses to answer	88

7. Do you belong to any clubs, organizations, church or groups?

Yes	1
No	2
If yes, please list here	a. b. c.

Please answer yes or no to the following questions

	Yes (1)	No (2)	Refusal (88)
8) Do you smoke or use tobacco now?	1	2	88
9) Have you smoked 5 packs of cigarettes in your lifetime?			
10) How old were you when you started smoking?			
11) Who introduced you to smoking?	1	2	88
12) If you ever smoked, how long did you begin smoking cigarettes?	1	2	88
13) If you ever smoked, who introduced you to cigarettes?			
14) Who else in your family smokes or has ever smoked?	e) Brother f) Grandmother g) Grandfather h) Other _____		
a) Spouse/Partner b) Mother c) Father d) Sister			

B. Health Risk Factors Continued

15) If you no longer smoke, how long ago did you quit?

16) Who advised or help you to quit smoking?
 17) And what was done or said to help you quit smoking?

C. Personal Style

Please tell me whether or not the following statements are true for you.

	True	False	Not sure
1. *If I am unable to keep an appointment I call ahead and reschedule	1	2	3
2. *My family and friends often seek my advice when faced with difficult situations	1	2	3
3. *Others consider me a dependable person	1	2	3
4. *I seldom miss appointments	1	2	3
5. *I keep important information like appointments and personal plans written down	1	2	3
6. *I do most things I set out to do	1	2	3
7. *I generally arrive at places on time	1	2	3
8. *I usually look at my calendar before making plans	1	2	3
9. *I believe there is healing power in prayer, meditation and faith in God.	1	2	3

C. Personal Style Continued

10. Who would you trust the most for advice about the following decisions? (only one answer)

1. Self 2. Father 3. Mother 4. Spouse/partner

5. *Children 6.Pastor/Minister 7. .Doctor/Nurse 8. Police

9.Hospitals/Clinics 10. Local Gov't 11. Federal Govt 12. Male friend(s) 13. Female friend(s)

14. Other (specify)

- a. Health & Medical issues (preventive services such as mammogram screening surgery, taking medications, etc) _____
- b. Money and finance (borrowing, investing, etc.) _____
- c. Marriage & Relationships _____
- d. Divorce / separation _____
- e. Education / adult learning _____
- f. Counseling/therapy _____
- g. Smoking / drinking / drugs _____
- h. Work / job _____
- i. Raising children _____
- j. Violence issues _____

D. Access & Utilization Section

Please indicate whether the following statements are true for you.

	Yes	No	No opinion
1. *I can get my clinical breast exam and mammogram at work.	1	2	3
2. *I feel better when my mammogram records are being kept at one location.	1	2	3
3. *I prefer to be seen by physicians/nurses that are of my same race.	1	2	3
4. *The location of my last mammogram was convenient	1	2	3
5. *I prefer a female physician	1	2	3
6. *It would be helpful to me if the healthcare facilities were open during late evenings and weekends	1	2	3
7. *The staff at the mammography facility makes me feel comfortable	1	2	3
8. *I receive my mammograms at a place with which I was already familiar before being sent.	1	2	3
9. *I have a high co-pay which could delay me seeking medical services	1	2	3
10. *I have a high deductible which could delay or keep me from seeking medical services	1	2	3
11. *I refuse to be treated or seen by someone other than my own doctor	1	2	3
12. I am afraid to go for health care because the place I have to go is in a dangerous place.	1	2	3
13. *I don't get health care because I will lose pay or time at work	1	2	3
14. I do not receive the proper treatment from the healthcare system because of my race.	1	2	3
15. I do not receive the proper treatment from the healthcare system because I do not have a lot of money.	1	2	3

E. Breast Cancer History

1. Is there anyone in your family who has had any type of cancer?

Yes	1
No	2
Don't know	3
Refusal	88

2. What type? (circle all that apply)	a. Breast	b. Colon	c. Prostate	d. Lung	e. Cervi
	f. Bladder	g. Bone	h. Stomach	i. Liver	j. Pancr

Fill in other types of cancers here:

E. Breast Cancer History Continued

2) *From the following list of relatives, do you have any which are related to you by blood, that have had breast cancer?

a) Mother	1	2	3
b) Grandmother(s)	1	2	3
c) Aunt(s)	1	2	3
d) Sister(s)	1	2	3

Please tell me whether or not you have had or been told the following:

	Yes	No	Refusal
	1	2	3

3. Have you ever had breast cancer?
4. Have you ever been told by a doctor that you have some kind of breast condition, but that it is not breast cancer?

F. Breast Cancer Screening Knowledge, Attitudes

3. In your opinion, how likely is it that you will get breast cancer in your lifetime?

Very Likely	1
Somewhat Likely	2
Somewhat Unlikely	3
Very Unlikely	4
Don't Know	7
Refusal	88

Can you name any examinations that can be done to find breast cancer in its very early stage? (Do not read but circle all mentioned and then ask, "any others?")

Breast Self Examination	1
Doctor or Nurse perform clinical breast examination	2
Chest x-ray	3
Mammography	4
Other (specify)	5
Don't Know	7
Refusal	8

F. Breast Cancer Screening Knowledge, Attitudes Continued

3. What do you think are some warning signs or symptoms of breast cancer? (Do not read. Check all mentioned. After respondents give their answers, ask, "any others?")

Lumps in breast	1
Shortness of breath	2
Pain, soreness, burning in breast	3
Nausea	4
Cloudy or bloody discharge from nipple	5
Swelling or enlargement of one breast	6
Change in shape of breast or nipple	7
Discoloration	8
Puckering of the skin of the breast	9
Enlargement of lymph nodes	10
Unusual swelling of the upper arm	11
Don't know	12
Other (specify) here:	13

Refusal

88

F. Breast Cancer Screening Knowledge, Attitudes (BSE)

Please answer the following Breast Self Examination Questions

1) Do you know how to examine your breasts for lumps? (if no skip the next question)

2) Do you examine your breast for lumps?

Yes No Refusal

1 2 88

Circle the choice, which is closest to the response.

3) How often do you examine your breast for lumps?

Whenever she thinks about it

1

Yearly

2

Monthly

3

Weekly

4

Daily

5

Refusal

88

F. Breast Cancer Screening Knowledge, Attitudes (BSE Continued)

4) Who taught you how to examine your breasts?

Doctor

1

Nurse

2

Other health professional

3

Mother

4

Friend

5

Sister

6

Relative

7

Video

8

Read in a book, magazine, etc.

9

Learned in class or meeting

10

Other (specify here):

11

(For subjects who answer no to examining their breast)

5) Women have many reasons for not examining their breasts. What would you say are the reasons you do not examine your breast?

Doctor or nurse does it

1

Husband or partner does it

2

No cancer in the family

3

Afraid of what I might find

4

Doctor said not necessary

5

I couldn't find anything

6

Can't remember to do it

7

Just don't do it

8

Don't know how to do it

9

Other (Specify)

10

Refusal

11

F. Breast Cancer Screening Knowledge, Attitudes (BSE Continued)

Women have many reasons for not examining their breasts. What would you say are the reasons women do not examine their breast?

Doctor or nurse does it	1
Husband or partner does it	2
No cancer in their family	3
Afraid of what they might find	4
Doctor said not necessary	5
They couldn't find anything	6
Can't remember to do it	7
Just don't do it	8
Don't know how to do it	9
Other (Specify)	10
Refusal	11

Clinical Breast Examination Practices

2) How much have you heard about a clinical breast examination, which is when the breast is felt for lumps by a doctor, nurse or medical assistant?

Nothing at all	1
Very little	2
Fair amount	3
Great deal	4
2) About how often should a woman at your age have a clinical breast exam?	5
Weekly	1
Monthly	2
Yearly	3
Less than once a year	4
Only when there is a problem	5
Only when a doctor or nurse recommends it	6
Don't know	7
Refusal	8

F. Breast Cancer Screening Knowledge, Attitudes Continued (CBE Continued)

3) When did you have your last clinical breast exam?

Within the last year	1
Between 1 and 2 years ago	2
Between 2 and 5 years ago	3
More than 5 years ago	4
Don't know	5
Refusal	8

4) Have you ever had a clinical breast exam where the results were not normal? Not normal" meaning a problem found in the breast.

Yes	No	RF
1	2	3

5) Did your doctor ask you to have additional tests because your results were not normal? 1 2 3

6) Did you have any additional tests? 1 2 3

7) Did you have any surgery or other treatment? 1 2 3

8) Did the breast exam, additional tests, surgery or other treatment indicate that you had breast cancer? 1 2 3

9) If yes, in which year? And in which hospital? (fill here):

Mammogram

3) How much have you heard about a mammogram which is when an X-ray is taken only of the breast by a machine that presses the breast while the picture is taken?

Nothing at all	1
Very little	2
Fair Amount	3
Great Deal	4
RF	88

2. About how often should a woman at your age have a mammogram?

Weekly	1
Monthly	2
Yearly	3
Less than once a year	4
Only when there is a problem	5
Only when a doctor/nurse recommends	6
DK	7
RF	88

3. Has a doctor or nurse ever recommended that you have a mammogram?

Yes	1
No	2
RF	88

4. When did you have your very first mammogram?

Within the last year 1

Between 1 and 2 years ago	2
Between 2 and 5 years ago	3
More than 5 years ago	4
DK	7
RF	88

F. Breast Cancer Screening Knowledge, Attitudes Continued (Mammogram Continued)

5. Women have many reasons for not having mammogram. What would you say are the reasons women do not get mammograms?

Procrastination	1
Don't know they should	2

Not needed	3
Cost too much	4
No insurance coverage	5
Don't go to the doctor's office	6
Don't have a doctor	7
Not recommended	8
Too embarrassing	9
Haven't had any problems	10
Fear	11
Don't know where to go	12
Haven't thought about it	13
Could not remember to schedule one	14
Don't trust doctors/health system	15
Afraid doctor might find cancer	16
Other (Specify)	17
RF	88

**6. What would you say are the main reasons that you had a mammogram?
(circle those reasons given)**

Because of a breast problem	1
Because I already had breast cancer	2
I know it can save my life	3
My relative(s) (mother, aunt.. etc) had breast cancer	4
My friends recommended it	5
I attended a health fair	3
I read the pamphlet of the NCI (ACS)	7
My doctor recommend it or referred me	8
My doctor made me understand the benefit	9
My insurance covers the service	10
Better to find out now than be surprised later	11
My church / club arranged it	12
Other reason specify here:	13

F. Breast Cancer Screening Knowledge, Attitudes (Mammogram Continued)

7. When did you have your last mammogram?

Within the last year	1
Between 1 and 2 years ago	2
Between 2 and 5 years ago	3
More than 5 years ago	4
DK	7
RF	88

**8. Have you ever had a mammogram where the results were not normal? "Not normal"
meaning problems found in the breast.**

Yes	1
No	2

RF

88

9. Did your doctor ask you to have additional tests because your results were not normal?

Yes

1

No

2

RF

88

10. Did you have any additional tests?

Yes

1

No

2

RF

88

11. Did you have any surgery or other treatment?

Yes

1

No

2

RF

88

12. Did the mammogram, additional tests, surgery or other treatment indicate that you had breast cancer?

Yes

1

No

2

RF

88

13. If yes to question 30, in which year?**14. If yes, in which hospital?****F. Breast Cancer Screening Knowledge, Attitudes (Knowledge & Attitude)**

I am going to read a series of statements about breast cancer. Please tell me whether you strongly agree, agree, disagree, strongly disagree or undecided with each statement.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	RF
1	2	3	4	5	88

1. Many women are concerned about the possibility of getting breast cancer.	1	2	3	4	5	88
2. Women over 50 are more likely to get breast cancer.	1	2	3	4	5	88
3. Women whose mothers or sisters have had breast cancer are most likely to get breast cancer.	1	2	3	4	5	88
4. Women under 50 are more likely to get breast cancer.	1	2	3	4	5	88
5. Any woman is likely to get breast cancer.	1	2	3	4	5	88
6. If breast cancer is found and treated early it can be cured.	1	2	3	4	5	88
7. Women who have their first child after age of 30 are more likely to get breast cancer.	1	2	3	4	5	88
8. If a woman has a lump in her breast it is almost always breast cancer.	1	2	3	4	5	88
9. I worry about getting breast cancer	1	2	3	4	5	88
10. By doing a self-breast exam often, it is possible to find breast cancer in time to cure it.	1	2	3	4	5	88

11. Women who do not have children are more likely to get breast cancer.	1	2	3	4	5	88
12. Mammography is not needed if breast Cancer does not run in your family.	1	2	3	4	5	88
13. I believe if I had breast cancer I would be able to look at my breast and know.	1	2	3	4	5	88
14. How much have you heard about current treatment allowing the doctor to remove only the part of the breast that has the cancer if it is detected very early?						
Nothing at all						1
Very little						2
Fair amount						3
Great deal						4
RF						88

F. Breast Cancer Screening Knowledge, Attitudes

(Knowledge & Attitude Continued)

For each of the following statements about breast cancer, please indicate your choice.

	Strongly Agree 1	Agree 2	Undecided 3	Disagree 4	Strongly Disagree 5	RF 88
15. Getting the disease is a death sentence for most people.	1	2	3	4	5	88
16. If I had the disease, I would rather not know about it.	1	2	3	4	5	88
17. There are some things I can do to prevent getting the disease.	1	2	3	4	5	88
18. Getting tested for the disease is very painful.	1	2	3	4	5	88
19. It's too late for me to start worrying about the disease now.	1	2	3	4	5	88
20. What people eat or drink doesn't affect whether they will get the disease.	1	2	3	4	5	88
21. Having an operation for the disease can expose it to the air and cause it to spread.	1	2	3	4	5	88
22. Disease treatment costs so much that it would probably be more than I can afford.	1	2	3	4	5	88
23. Getting treated for the disease is often worse than having it.	1	2	3	4	5	88
24. If treated for the disease early one will be more likely to return to a normal life.	1	2	3	4	5	88

25. Getting proper treatment for the disease is easy.	1	2	3	4	5	88
26. The disease only strikes older people.	1	2	3	4	5	88
27. Eating high fiber foods (bread) decrease the risks of getting the disease.	1	2	3	4	5	88
28. Having other family members who had cancer.	1	2	3	4	5	88

G. General Health Knowledge

I am going to read a series of statements about behaviors. Please tell me whether you believe that these behaviors would make it more or less likely to get cancer.

	Make it more likely 1	Won't make any difference 2	Make it less likely 3	Not sure 4	RF 88
1. Eating lots of fresh fruits and vegetables.	1	2	3	4	88
2. Smoking cigarettes or chewing tobacco	1	2	3	4	88
3. Getting exercise	1	2	3	4	88
4. Having radiation treatment or x-rays	1	2	3	4	88
5. Having a lot of stress in your life	1	2	3	4	88
6. Eating foods high in fat, such as bacon, sausage, cold cuts, oils, margarine and dairy products such as whole milk and butter	1	2	3	4	88
7. Being Black	1	2	3	4	88
8. Being White	1	2	3	4	88
9. Getting a bump or hard hit to the body	1	2	3	4	88
10. Eating high fiber foods such as whole grain breads and cereals, fruits, vegetables	1	2	3	4	88
11. Drinking alcohol.	1	2	3	4	88

G. General Health Knowledge Continued

Now, I am going to ask you some questions about your health knowledge, attitudes and exams.

12. How would you say your health is in general?

Poor	1
Fair	2
Good	3
Excellent	4
No opinion	5
RF	88

13. How would you say your health is compared to other women who are close to you in age?

Much worse	1
Worse	2
Same	3
Better	4
Much better	5
RF	88

14. How serious do you think breast cancer is as a health problem for women?

Not so serious	1
Somewhat serious	2
Very serious	3
RF	88

15. Have you have your most recent general physical examination?

Year:	
Month	
RF	88

G. General Health Knowledge

16. I am going to read a list of factors; in your opinion, which are the ones you think would increase a person's chance of getting cancer. (circle choices)

High blood pressure	1
Diabetes	3
High cholesterol	4
Being overweight	5
Family history	6
Lack of exercise	7
Growing Older	8
Too much sugar	9
Drug use	10
High fat diet	13
Too much salt	14
Caffeine	15
Sudden Weight Loss	16

Unprotected sex	17
Promiscuous sex (Multiple sexual partners)	18
Chewing Tobacco	19
Being Female	20
Being Male	21

H. Barriers to Cancer Screening

For each statement, check the one answer that comes closest to the way you feel

	Strongly Agree 1	Agree 2	Disagree 3	Strongly Disagree 4	Undecided 5	RF 88
4) Cancer treatment would be worth going through if there was a small chance that it would save my life.	1	2	3	4	5	88
2) There is very little a person can do to reduce his/her chances of getting cancer	1	2	3	4	5	88
3) Having a check-up once a year is worth the time and effort.	1	2	3	4	5	88
4) I have doubts about some of the things doctors say they can do for you.	1	2	3	4	5	88
5) I am aware of the health services in my community	1	2	3	4	5	88
6) I would have a mammogram (breast x-ray) only if my doctor recommended it.	1	2	3	4	5	88
7) I would seek more medical services if they were not expensive.	1	2	3	4	5	88
8) I am usually afraid of what the doctor will find.	1	2	3	4	5	88
9) Breast exams embarrass me.	1	2	3	4	5	88
10) Exposure to radiation during a mammogram concerns me.	1	2	3	4	5	88
11) I appreciate reminders about my medical appointments.	1	2	3	4	5	88
12) Not having transportation makes it difficult for me to keep medical appointments.	1	2	3	4	5	88
13) The cost of medical care keeps me from going to the doctor.	1	2	3	4	5	88
14) It takes a long time to get an appointment to see a doctor	1	2	3	4	5	88
15) Doctors make me feel uncomfortable.	1	2	3	4	5	88
16) Getting the time off work makes it difficult for me to go to the doctor.	1	2	3	4	5	88

H. Barriers to Screening Continued.

	Strongly Agree 1	Agree 2	Disagree 3	Strongly Disagree 4	Undecided 5	RF 88
17. The chance of finding something wrong keeps me from seeking medical advice.	1	2	3	4	5	88
18. Doctors take their time when explaining medical procedures to me to make sure I understand.	1	2	3	4	5	88
19. Instead of going to the doctor when I do not feel well, I just take it easy for a while.	1	2	3	4	5	88
20. Privacy is important to me during my visit to health care facilities.	1	2	3	4	5	88
21. I am afraid of the pain I may feel when I visit a health care facility.	1	2	3	4	5	88
22. * Receiving proper respect when and courtesy during my exam is very important	1	2	3	4	5	88
23. * Thinking or talking about breast cancer too much could cause me to get it.	1	2	3	4	5	88
24. * I am too healthy to get breast cancer	1	2	3	4	5	88
25. * I do not believe I will ever get breast cancer because I take such great care of myself	1	2	3	4	5	88
26. * I am not comfortable with allowing a stranger to touch my breast, even though it is a health professional.	1	2	3	4	5	88
27. * I do not like student doctors being involved with my care or exam without my permission in advance.	1	2	3	4	5	88
28. * I don't like to ask the doctor a lot of questions because s/he does not have time.	1	2	3	4	5	88
H. Barriers to Cancer Screening Continued	Strongly Agree 1	Agree 2	Disagree 3	Strongly Disagree 4	Undecided 5	RF 88
29. *I would only have a mammogram if there were a problem with my breast.	1	2	3	4	5	88
30. *I don't need a mammogram because I perform my monthly breast self-examination.	1	2	3	4	5	88

31. *Some women probably do not have mammograms because they do not like exposing their breast during the exam.	1	2	3	4	5	88
32. *Mammography produces too many negative feelings.	1	2	3	4	5	88
33. *I am not ashamed of my body	1	2	3	4	5	88
34. *I believe the size of my breast make it hard for me to get a good mammogram.	1	2	3	4	5	88
35. *Sometimes the mammogram technician is rude, non-caring, unhelpful and not patient enough.	1	2	3	4	5	88
36. *When having my mammogram, I fear the technician telling me that they need to repress my breast to get a better picture	1	2	3	4	5	88

I. Empowering Factors

I am going to read the following statements and you tell me whether or not it applies to you.	Yes	No
1. * It is up to me to work with my doctor to protect myself from cancer.	1	2
2. * Having a mammogram reassures me that I have done my part toward protecting my breast health.	1	2
3. * Having a mammogram makes me feel better about myself.	1	2
4. * My spouse encourages me to get my mammogram.	1	2
5. *Having regular mammograms is very important to my family		
6. * Having regular mammograms is very important to my friends.	1	2
7. * I am able to talk about health issues such as breast cancer with my family and friends	1	2
8. * I personally know someone how has had breast cancer	1	2
9. * I personally know someone who has died from breast cancer	1	2

G. General Health Knowledge Continued

* I realize that I am at risk for breast cancer because I know someone who has it or has been previously diagnosed with the disease. Yes 1 No2

I am going to read you a list of possible sources of information. For each source, please tell me if you have received any information from them about preventing cancer.

In the past 2 years, have you received information from (ITEM):

- a Cancer Information Service phone line (800-4-Cancer) 1 2
- b Organizations such as the American Cancer Society 1 2
- c *Access Med..PLUS 1 2
- d Your friends, co-workers, family or relatives 1 2
- e Your doctor, nurse or health care provider 1 2

<input type="checkbox"/> f	Community/groups	1	2
<input type="checkbox"/> g	Place where you work	1	2
<input type="checkbox"/> h	Hospitals/Health Clinic	1	2
<input type="checkbox"/> i	Health fairs	1	2
<input type="checkbox"/> j	Hair stylist/barber	1	2
<input type="checkbox"/> k	Church	1	2
<input type="checkbox"/> l	Posters and bulletin boards	1	2
<input type="checkbox"/> m	Newspapers	1	2
<input type="checkbox"/> n	Magazines, books and pamphlets	1	2
<input type="checkbox"/> o	Radio	1	2
<input type="checkbox"/> p	Television	1	2
<input type="checkbox"/> q	Audio or video tape	1	2

12. *From the above sources that you received information, which helped you to decide to get a mammogram? _____

13. *Of those, which was most helpful? _____

Final Thoughts Concerning Mammography

1. *Please share with me how you first learned about mammography?

2. *How old were you?

3. *Before your first mammogram, what did you expect the experience to be like?

4. *Was there anything about the thought of having the test that made you really hesitate?

5. *When you thought about being screened, was there anything in your mind that made you feel like backing out or delaying the test?

6. *After your first mammogram appointment was scheduled, did you keep the appointment?

7. *If not, what happened?

8. *If not, how long did it take you to reschedule the appointment?

9. *If you kept the appointment despite some personal worries or concerns, how did you overcome those feelings?

10. *If you originally canceled then re-scheduled and kept your mammogram appointment, did anyone or anything specifically help you to decide to go through with the test?

11. *If you could only tell another woman three things to encourage her to have her mammogram done, what would those three things be?

1. _____
2. _____
3. _____

END

END TIME: _____

INTERVIEWER: _____

THANK THE RESPONDENT FOR PARTICIPATING.

Appendix C
(Final Survey)

Note: Do not read 'don't know' and 'refused' response options. Unless otherwise noted, read all other response options.

Hello, my name is _____ and I am with the Metro Nashville Health Department. We are doing a research survey about your satisfaction with your health care and health issues. In return for your time we will send you a \$15 gift certificate from Wal-Mart. This survey should take about 20 minutes. At the end of the survey, you may give us any address to which we can send your \$15 gift card. The mailing information you provide (address and name) is not a part of the study and will not be added to your responses in this survey. Your responses will be grouped with about 1000 other participants' responses. You will not be able to be identified from this study. Only the project director and the project programmer will have your responses and will not reveal them to anyone. You can refuse to answer any question or end the survey at any time, however you do need to complete the survey in order to receive your gift certificate. Do you give me permission to proceed with this survey? (yes/no) Thank you for agreeing to help us with our survey.

This first section of questions deals with your experience and satisfaction with health insurance and health facilities.

1 Do you have health insurance?

- Yes
- No
- Don't know
- Refused

2 If yes, what kind of insurance do you have?

- TennCare
- Medicare
- Private/HMO
- Other
- Don't know
- Refused

3 If you were on TennCare, have you lost your coverage?

- Yes
- No
- Don't know
- Refused

4 To what extent have the changes to TennCare affected you?

- Extremely
- Somewhat
- Not much
- Not at all

5 Do you take prescription medication on a regular basis?

- Yes
- No
- Don't know
- Refused

6 If yes, how many different medicines do you take each day?

- Very satisfied
- Somewhat satisfied
- Somewhat not satisfied
- Very unsatisfied

7 How satisfied are you with the services your doctor or health care provider gives you?

8 If you are not satisfied, what are the main reasons for your dissatisfaction? (Check all that apply)

Difficult to have an early appointment
 Long waiting time
 Long time in the office
 Can't get help on the phone
 Doctor does not seem interested in my health
 Doctor does not answer my questions about health care
 Doctor does not listen to me
 Doctor's staff does not respect me
 I am unable to personally speak to the doctor

9 Was there a time in the past 12 months when you needed medical care but did not receive it?

Yes
 No
 Don't know
 Refused

10 If yes, what were the three main reasons you did not get the health care you wished to receive? (Do not read options)

Cost (or no insurance)
 Distance
 Office wasn't open when I could get there
 Too long a wait for an appointment
 Too long a wait in waiting room
 No child care
 No transportation
 No access for people with disabilities
 The medical provider didn't speak my language
 Other (specify)
 Don't know
 Refused

11 During the past 12 months, was there anytime you needed a prescription medication but could not afford it?

Yes
 No
 Don't know
 Refused

12 Who would you trust the most for advice about health and medical treatments?

Self
 Father
 Mother
 Spouse/partner
 Children
 Pastor/minister
 Doctor/nurse
 Police
 Hospitals/clinics
 Local government
 Federal government
 Male friends
 Female friends
 Other

13 Do you currently have a regular medical doctor you go to if you are sick or need advice about a medical problem?

Yes
 No
 Don't know
 Refused

14 How often do you see a doctor when you're not sick?

Never
 Once every 3 years
 Once every 2 years
 Once every year
 More frequently

15 When was the last time you saw a medical doctor when you were not sick?

In the past month
 In the past 6 months
 In the past year
 In the past 2 years
 3 or more years ago

16 When you are sick or need advice about your health, where do you usually go?

Doctor's office
 A public health clinic or community health center
 A hospital outpatient department
 A hospital emergency room
 Urgent care center
 Some other kind of place
 No usual place
 Don't know
 Refused

17 How long does it take you to get to your usual place of care?

0-15 minutes
 16-30 minutes
 31-45 minutes
 46 minutes- an hour
 More than an hour

18 Does the insurance process keep you from going to the doctor?

Yes
 No
 Don't know
 Refused

19 If the insurance process were easier and faster, would you go to the doctor more often?

Yes
 No
 Don't know
 Refused

20 If going to the doctor cost less than \$8, would you go more often?

Yes
 No
 Don't know
 Refused

I am going to read a series of statements to you about doctors and health care. For each one I would like you to tell me if you strongly agree, agree, disagree, strongly disagree or don't know. We are interested in your opinion and there are no wrong answers.

21 I trust my doctor's judgments about health issues.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

22 I don't feel comfortable talking about personal health issues with my doctor.

Strongly agree
 Agree
 Disagree
 Strongly disagree

Don't know
 Refused

23 My doctor treats me with respect.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

24 My doctor listens to me when I talk about my health.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

25 I feel that my doctor's office staff treats me with courtesy.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

26 Instead of going to the doctor when I do not feel well, I just take it easy for a while.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

27 Not having transportation makes it difficult for me to keep medical appointments.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

28 I would seek more medical services if they were not expensive.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

29 It would be helpful to me if the healthcare facilities were open during late evenings and weekends.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

30 I have doubts about some of the things doctors say they can do for people.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

31 God will heal me if I get sick therefore I do not need to see a doctor.

Strongly agree
 Agree
 Disagree

- Strongly disagree
- Don't know
- Refused

32 I don't like to ask the doctor a lot of questions.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refused

33 Doctors take time to explain medical procedures to me to make sure I understand.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refused

34 I am afraid of the pain I may feel when I visit a health care facility.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refused

35 I am aware of the health services in my community.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refused

36 Receiving proper respect and courtesy during my exam is very important.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refused

37 Privacy is very important to me during my visit to health care facilities.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refused

38 I appreciate reminders about my doctor's appointments.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refused

39 I prefer to be seen by physicians/nurses that are of my same ethnicity.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refused

40 I do not receive the proper treatment from the healthcare system because I do not have a lot of money.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

41 I do not receive the proper treatment from the healthcare system because I am a woman.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

42 I do not receive the proper treatment from the healthcare system because of my level of education.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

43 I do not receive the proper treatment from the healthcare system because of my race.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

44 If you had the choice, would you prefer to see a doctor that is:

25-35 years old
 36-55
 56-75
 Doesn't matter

Now I am going to ask you several questions about your health.

45 Would you say that in general your health is:

Excellent
 Very good
 Good
 Fair
 Poor
 Don't know/not sure
 Refused

46 Are you limited in any way in day-to-day activities because of physical, mental, or emotional conditions?

Yes
 No
 Don't know
 Refused

47 Do you exercise or have a regular physical activity outside of work?

Yes
 No
 Don't know
 Refused

48 If yes, how many times per week do you exercise 20 minutes or more?

Once
 Twice
 Three or more times

49 What is the activity? (specify) _____

50 Have you smoked at least 5 packs of cigarettes in your entire life?

Yes
 No
 Don't know
 Refused

51 If yes, have you ever tried to quit? Yes
 No
 Don't know
 Refused

52 Do you currently smoke? Yes
 No
 Don't know
 Refused

53 In the last thirty days, how many times have you had 5 or more alcoholic drinks in one sitting? None
 One to four times
 Five to nine times
 Ten to nineteen times
 Twenty or more

54 Which are the 3 things that worry you most in the order of their importance? Health
 Marriage/relationship
 Children
 Finance/money
 Illness or death in family
 Job/work
 Addiction/substance abuse
 Violence
 Other

55 In your opinion, how likely is it that you may get breast cancer in your lifetime? Very likely
 Somewhat likely
 Somewhat unlikely
 Very unlikely
 Don't know
 Refused

56 Do you personally know someone who has had breast cancer? Yes
 No
 Don't know
 Refused

57 Do you personally know someone who died from breast cancer? Yes
 No
 Don't know
 Refused

Again, I am going to read a series of statements, this time about breast cancer, and I would like you to tell me if you strongly agree, agree, disagree, strongly disagree, or don't know. There are no wrong answers; I just want your opinion.

58 I worry about getting breast cancer. Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

59 Only older women get breast cancer. Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

60 Breast cancer is a very serious health problem for women. Strongly agree
 Agree
 Disagree

Strongly disagree
 Don't know
 Refused

61 Women whose mothers or sisters have had breast cancer are most likely to get breast cancer.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

62 It's too late for me to start worrying about breast cancer now.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

63 What people eat or drink doesn't affect whether they will get breast cancer.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

64 Getting breast cancer is a death sentence for women.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

65 If I had breast cancer, I would rather not know about it.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

66 Getting treated for breast cancer is often worse than having it.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

67 If breast cancer can be found early enough, it can be cured.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

68 There are some things I can do to reduce the risk of dying from breast cancer.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

69 Thinking or talking about breast cancer too much could cause me to get it.

Strongly agree
 Agree
 Disagree

- Strongly disagree
- Don't know
- Refused

70 I am too healthy to get breast cancer.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refused

71 Eating high fiber foods decreases the risks of getting breast cancer.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refused

72 Which of the following do you think are some warning signs or symptoms of breast cancer? Tell me yes or no for each one. (check answers)

- Lumps in breast
- Shortness of breath
- Pain, soreness, or burning in breast
- Nausea
- Cloudy or bloody discharge from nipple
- Swelling or enlargement of one breast
- Change in shape of breast or nipple
- Discoloration
- Puckering of the skin of the breast
- Enlargement of the lymph nodes
- Unusual swelling of the upper arm

I am going to ask you several questions about your and your family's history of cancer.

73 Has your mother, sister or daughter had breast cancer?

- Yes
- No
- Don't know
- Refused

74 Have either of your grandmothers or any aunts related by blood had breast cancer?

- Yes
- No
- Don't know
- Refused

75 Has anyone else in your family had any other kind of cancer?

- Yes
- No
- Don't know
- Refused

76 If yes, what was their relation to you?

- Grandfather
- Father
- Brother
- Son
- Cousin
- Nephew
- Niece

Other (specify)

77 If yes, what kind of cancer was it?

- Lung cancer
- Skin cancer
- Oral cancer
- Colorectal cancer
- Prostate cancer
- Urinary cancer
- Leukemia
- Genital cancer
- Other (specify)

78 Have you ever been diagnosed by a doctor as having any of the following diseases?

- Diabetes
- Heart disease
- High blood pressure
- High cholesterol
- Asthma
- Arthritis
- Depression or mental illness
- Some other disease (specify)

79 Have you ever had breast cancer?

- Yes
- No
- Don't know
- Refused

If yes, go to 79, if no go to 80

80 If yes, what were the month _____ and year _____ of the diagnosis?

81 Have you ever been told by a doctor that you had some kind of breast condition but that it was not breast cancer?

- Yes
- No
- Don't know
- Refused

82 Do you check or examine your breasts for lumps?

- Yes
- No
- Don't know
- Refused

83 A clinical breast exam is when a doctor or nurse checks your breasts for lumps. Have you ever had a clinical breast exam?

If yes, go to 83, if no go to 84

- Yes
- No
- Don't know
- Refused

84 If yes, when did you have your last clinical breast exam?

- Within the last year
- 1-2 years ago
- 2-3 years ago
- More than 5 years ago
- Don't know.

85 A mammogram is when an X-ray is taken only of the breast by a machine that presses the breast while the picture is taken. Has a doctor or nurse ever recommended that you have a mammogram?

- Yes
- No
- Don't know
- Refused

86 Have you ever had a mammogram?

- Yes
- No
- Don't know
- Refused

If yes, go to 86, if no go to 94

<p>87 If yes, how many times during the past 5 years have you had a mammogram?</p>	<input type="checkbox"/> Never <input type="checkbox"/> Once <input type="checkbox"/> Twice <input type="checkbox"/> 3 times <input type="checkbox"/> 4 times <input type="checkbox"/> 5 times <input type="checkbox"/> More than 5 times <input type="checkbox"/> Don't know
<hr/>	
If Never, go to 94	
<p>88 If at least once, when did you have your first mammogram?</p>	<input type="checkbox"/> Within the last year <input type="checkbox"/> 1-2 years ago <input type="checkbox"/> 2-3 years ago <input type="checkbox"/> More than 5 years ago <input type="checkbox"/> Don't know <input type="checkbox"/> Refused
<hr/>	
<p>89 Did someone go with you to your first mammogram?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/> Refused
<hr/>	
If No, go to 90	
<p>90 If yes, who was it?</p>	<input type="checkbox"/> Spouse <input type="checkbox"/> Close friend <input type="checkbox"/> Parent <input type="checkbox"/> Child <input type="checkbox"/> Other relative <input type="checkbox"/> Health worker <input type="checkbox"/> Other
<hr/>	
<p>91 Did you have a mammogram in 2003?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/> Refused
<hr/>	
<p>92 Did you have a mammogram in 2002?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/> Refused
<hr/>	
<p>93 Was the location of your last mammogram convenient?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/> Refused
<hr/>	
<p>94 Does a community health worker help you get your mammograms?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/> Refused
<hr/>	
<p>95 About how often should a woman at your age have a mammogram?</p>	<input type="checkbox"/> Once a year <input type="checkbox"/> Once every two years <input type="checkbox"/> Once every 3-5 years <input type="checkbox"/> Once every 10 years <input type="checkbox"/> Only when she finds a lump in her breast <input type="checkbox"/> Don't know <input type="checkbox"/> Refused

Now I am going to ask you for your opinions on statements about mammograms. Please tell me if you strongly agree, agree, disagree, strongly disagree, or don't know.

96 Getting a mammogram is difficult because I'm scared that they will find cancer.

□ Strongly agree
□ Agree
□ Disagree
□ Strongly disagree
□ Don't know
□ Refused

97 I don't have the time to get a mammogram.

□ Strongly agree
□ Agree
□ Disagree
□ Strongly disagree
□ Don't know
□ Refused

98 Remembering to schedule a mammogram is difficult.

□ Strongly agree
□ Agree
□ Disagree
□ Strongly disagree
□ Don't know
□ Refused

99 My work schedule makes getting a mammogram difficult.

□ Strongly agree
□ Agree
□ Disagree
□ Strongly disagree
□ Don't know
□ Refused

100 The cost of a mammogram keeps me from getting one.

□ Strongly agree
□ Agree
□ Disagree
□ Strongly disagree
□ Don't know
□ Refused

101 The pain and discomfort keep me from getting a mammogram.

□ Strongly agree
□ Agree
□ Disagree
□ Strongly disagree
□ Don't know
□ Refused

102 The scary and stressful process of having a mammogram makes me not want to get one.

□ Strongly agree
□ Agree
□ Disagree
□ Strongly disagree
□ Don't know
□ Refused

103 Taking care of my family makes it difficult to find time to get a mammogram.

□ Strongly agree
□ Agree
□ Disagree
□ Strongly disagree
□ Don't know
□ Refused

104 I do not know where to go to get a mammogram.

□ Strongly agree
□ Agree
□ Disagree
□ Strongly disagree
□ Don't know
□ Refused

105 Having a check-up for breast cancer once a year is worth the time and effort.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

106 I would have a mammogram only if my doctor recommended it.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

107 Breast exams embarrass me.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

108 Exposure to radiation during a mammogram concerns me.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

109 I would only have a mammogram if there were a problem with my breast.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

110 Some women probably do not have mammograms because they do not like exposing their breast during the exam.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

111 I believe the size of my breasts makes it hard for me to get a good mammogram.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

112 Sometimes the mammography technician is rude, uncaring, unhelpful or not patient enough.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

113 Mammography is not needed if breast cancer does not run in your family.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

114 If a mammogram were free, I would get it.	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/> Don't know <input type="checkbox"/> Refused
<hr/>	
115 Getting tested for breast cancer is very painful.	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/> Don't know <input type="checkbox"/> Refused
<hr/>	
116 Having an operation for cancer can cause it to spread.	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/> Don't know <input type="checkbox"/> Refused
<hr/>	
117 Do you know anyone who, after an operation for cancer, had his or her cancer spread?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/> Refused
<hr/>	
118 If Yes, how many people?	<input type="checkbox"/> _____
<hr/>	
119 Breast cancer treatment costs so much that it would probably be more than I could afford.	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/> Don't know <input type="checkbox"/> Refused
<hr/>	
120 Getting proper treatment for breast cancer is not difficult.	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/> Don't know <input type="checkbox"/> Refused
<hr/>	
121 Having a mammogram reassures me that I have done my part toward protecting my breast health.	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/> Don't know <input type="checkbox"/> Refused
<hr/>	
122 It is up to me to work with my doctor to protect myself from cancer.	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/> Don't know <input type="checkbox"/> Refused
<hr/>	
123 Having a mammogram makes me feel better about myself.	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/> Don't know

Refused

124 My spouse/partner encourages me to get my mammogram.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refused

125 Having regular mammograms is very important to my family.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refused

126 Having regular mammograms is very important to my friends.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refused

127 You do not need a referral to get a mammogram.

- Agree
- Disagree
- Do not know

128 A woman can get a mammogram for free.

- Agree
- Disagree
- Do not know

129 (For compliant women) Select up to three main reasons you are able to get a mammography every year.

- Doctor's office sends me a reminder
- Health Care worker calls and reminds me
- I receive a newsletter with a yearly reminder
- I schedule with the doctor's office to remind me around my birthday
- A friend goes with me
- Other (specify)

130 (For compliant women) If you were to encourage women to get a mammogram what would you tell them?

(specify)

131 (For compliant women) How much do you agree with this statement:

I would consider helping 3 other women get their mammograms.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refused

132 (For non-compliant women) What is the biggest reason you do not get a mammography every year?

- Don't remember to schedule one
- Don't have time to bother with one
- Too uncomfortable with the whole procedure
- I won't ever get breast cancer so

why should I?
 Other (specify) _____

133 (For non-compliant women) What would help you get a mammogram every year? (specify)

These next few statements are about you and the people in your life. Again, there are no wrong answers. Tell me if you strongly agree, agree, disagree, strongly disagree, or don't know.

134 Usually, I decide where my household money is spent.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

135 There are people I can depend on to help me if I really need it.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

136 There is no one I can turn to for guidance in times of stress.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

137 There are people who depend on me for help.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

138 There are people in my life who enjoy the same social activities that I do.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

139 I feel personally responsible for the well being of another person.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

140 I have close relationships that provide me with a sense of emotional security and well-being.

Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know
 Refused

141 There is someone I can talk to about important decisions or problems in my life.

Strongly agree
 Agree
 Disagree

- Strongly disagree
- Don't know
- Refused

142 Do you belong to or regularly attend a church or other spiritually oriented group?	<ul style="list-style-type: none"><input type="checkbox"/> Yes<input type="checkbox"/> No<input type="checkbox"/> Don't know<input type="checkbox"/> Refused
143 If yes, how often do you attend church or other spiritually oriented activities?	<ul style="list-style-type: none"><input type="checkbox"/> Once a month<input type="checkbox"/> 4-6 times a month<input type="checkbox"/> More than 6 times a month
144 Has anyone ever discussed colorectal cancer with you?	<ul style="list-style-type: none"><input type="checkbox"/> Yes<input type="checkbox"/> No<input type="checkbox"/> Don't know<input type="checkbox"/> Refused

We are almost done with the survey. The next few questions are specific. It is OK if you do not know an answer.

145 What is colorectal cancer?	(for interviewers; colorectal cancer is cancer of the anus, rectum or colon) <ul style="list-style-type: none"><input type="checkbox"/> Correct<input type="checkbox"/> Incorrect
146 Can you recall the tests to find colorectal cancer? (Do not read options)	(for interviewers; DRE is a manual examination of the rectum, FOBT is an examination of feces for blood and can be performed by a clinic or at home by the subject, Sigmoidoscopy is a lower tract exam with an instrument, Colonoscopy is a full upper colon exam with an instrument and requires full anesthesia) <ul style="list-style-type: none"><input type="checkbox"/> DRE- Digital Rectal Exam<input type="checkbox"/> FOBT- Fecal Occult Blood Test<input type="checkbox"/> Sigmoidoscopy<input type="checkbox"/> Colonoscopy
147 Have you ever had a test for colorectal cancer?	<ul style="list-style-type: none"><input type="checkbox"/> Yes<input type="checkbox"/> No<input type="checkbox"/> Don't know<input type="checkbox"/> Refused
148 If yes, when was the test?	<ul style="list-style-type: none"><input type="checkbox"/> Past year<input type="checkbox"/> Within past two years<input type="checkbox"/> Within past five years<input type="checkbox"/> More than five years ago
149 If yes, which test was it? (Do not read answers)	<ul style="list-style-type: none"><input type="checkbox"/> DRE<input type="checkbox"/> FOBT<input type="checkbox"/> Sigmoidoscopy<input type="checkbox"/> Colonoscopy
150 Do you think you may develop colorectal cancer sometime during your life?	<ul style="list-style-type: none"><input type="checkbox"/> Very likely<input type="checkbox"/> Somewhat likely<input type="checkbox"/> Somewhat unlikely<input type="checkbox"/> Very unlikely<input type="checkbox"/> Don't know<input type="checkbox"/> Refused

These last questions are general questions about you and your living situations.

151 What year were you born?

152 How many people live with you at your residence?

153 In your household, how many children are under the age of 18?

154 Are you Hispanic or Latino?

- Yes
- No
- Don't know
- Refused

155 How tall are you without shoes?

156 How much do you weigh without shoes?

157 Are you? (read alternatives)

- Married
- Divorced
- Widowed
- Separated
- Never Married
- Member of Unmarried Couple
- Refused

158 What was the highest grade or year of school you completed?

- Elementary (1-8)
- Some high school (9-11)
- High school graduate or GED (12)
- Some college (1-3 years) or technical school
- College graduate (4 or more years)

159 What do you do for a living?

- Out of work
- Unable to work
- Student
- Homemaker
- Self-employed
- Employed part-time
- Employed full-time
- Retired

160 Is your annual household income from all sources:

- Less than 5k
- 10k-15k
- 15k-20k
- 20k-25k
- 25k-35k
- 35k-45k
- 45k-55k
- Over 55k

161 Do you:

- Own home
- Rent home
- Rent apartment
- Live with relatives
- Other

Thank you very much for helping us with this survey. If you would like to receive your \$15 gift certificate, please provide me with a contact name and mailing address. Your certificate will be mailed within the next two weeks.

Appendix D
(Curriculum Vitae)

EXPANDED RESUME OF DR. JANE FORT
2712 Meharry Boulevard
Nashville, TN 37208-2839
615-329-9723

EMPLOYMENT

Assistant Professor of Medical Education, Coordinator, Post Bac Program, School of Medicine Curriculum Evaluation Coordinator 1998; Department of Medical Education; Meharry Investigator/Project Director, Empowering Factors Among Breast Cancer Screening Compliant Underserved Populations grant 2004-; Education Specialist, EXPORT Center for Health Disparities grant 2004-; Assistant Dean of Student Affairs, 1998, Office of Student/Academic Affairs, School of Medicine; Meharry Medical College, 1005 D. B. Todd Boulevard, Nashville, TN 37208-3599; 615-327-5941. Facilitate successful medical school experiences for students through support of the activities of the Department, the Office of Student/Academic Affairs, the School of Medicine, and the College. Major responsibility to coordinate monthly curriculum course/clerkship evaluations by students throughout the School, providing results and recommendations. Facilitate evaluation reports of departments within the School. Provide leadership to collaborative efforts reporting the activities of the college. Support and conduct research activities on disease prevention, evaluation, and teaching in department, School and with colleagues. Major responsibility to coordinate, monitor, facilitate and report the day-to-day activities for the School's pre-professional post baccalaureate program, requiring facilitation and oversight of student activities throughout the first twelve months of a 14-month program that requires communication and coordination with College faculty and administrators as well as those in affiliating programs, institutions, and organizations. Department Chair: Pamela C. Williams, M.D.

Co-Investigator, Associate Director, Cancer Prevention Awareness Program (CPAP), Cancer Prevention Awareness: The Black College as a Resource/Targeting Cancer in Blacks (TCiB) Project, 1995-1997; Cancer Control Research Unit, Meharry Medical College, 1005 D. B. Todd Boulevard, Nashville, TN 37208-3599; 615-327-6927. Major responsibility was to direct and oversee the intervention component of CPAP, consisting of planning and implementation of cancer prevention education to reach 10,000 adult African Americans in Nashville. Specifically, consulted with staff including health education coordinator and assistant along with recruitment coordinator and assistant on development of techniques to reach the target population, to design and select materials appropriate for use in the target area, to provide awareness and training to target area residents and collect information from participants. Collaborated on data interpretation, publication, presentation, and dissemination of project experiences and findings. Principal Investigator and Director: Dr. Kofi A. Semenza.

Adjunct Associate Professor, Consultant, 1994; Alumni Visiting Professor, 1993; Visiting Lecturer, 1968. Fisk University, Nashville, TN 37208. As adjunct faculty in Department of Psychology, responsibility was to teach child and adolescent development course to undergraduate and graduate level students. Dr. Carrell P. Horton, Chair. As consultant to Fisk University Art Galleries, responsibilities included: consultation to museum/gallery staff on computer use, including production of labels and biographical information for five exhibits; providing recommendations on filing system and records and on use of student workers; coordination and preparation of orientation materials and procedures for volunteer docents and student guides; provision of written and oral information to guests in Van Vechten galleries and in Aaron Douglas Gallery. Mr. Kevin Grogan, Director. As visiting alumni faculty, provided information to undergraduate students based on experiences and expertise in psychology and education. Mrs. Joan Adams Bahner, Alumni Affairs Director.

Assistant Professor and Educational Specialist, 1987-1992; Department of Community Health and Preventive Medicine, Morehouse School of Medicine, 720 Westview Drive, SW, Atlanta, GA 30310-1495, 404-752-1620. General function was as educational resource providing educational expertise to faculty, staff and students of the Department of Community Health and Preventive Medicine. Specifically, activities included responsibility: to assist faculty in course organization and design through consultations and workshops; to coordinate required courses including developing course syllabi, goals and objectives, constructing and analyzing course tests, establishing and maintaining individual course test banks; to consult with faculty on teaching methods and lecture techniques; to deliver education content; to develop and maintain departmental educational support library; to design and implement faculty development programs for state health department personnel; to assist in designing educational programs for preventive medicine residents; to participate in writing grant proposals to fund research in educational and health promotion programs; to consult to department on communications to community-at-large and to healthcare community; to coordinate in-service activities for department members; to serve on departmental and institution-wide task forces and committees, including Curriculum Committee and Curriculum Revision Task Force. Served as Project Director to cancer control subcontract: Cancer Prevention Awareness: The Black College as a Resource. Chair: Dr. Daniel S. Blumenthal.

Director, 1986-1987; Program Manager for Evaluation, 1984-1987; Center for Faculty Development, Clark College, 240 James P. Brawley Drive SW, Atlanta, GA 30314. Major responsibility was to assist Office of Faculty and Instruction in implementation of faculty development programs, specifically to facilitate improvement of student performance through faculty development and support and through establishment of a comprehensive college-wide testing program. Duties included facilitating implementation of and reporting information from the Center's college-wide faculty development efforts which included skills development workshops, lectures/seminars, faculty retraining and graduate study, an instructional resource library, and a newsletter; producing workshops to enhance and develop professional and personal skills of faculty to meet goals of 10-Year Long-Range Plan of the College; assisting faculty in identifying and providing academic support to students likely to excel on nationally competitive examinations; providing and producing reports on higher education information and issues relevant to baccalaureate degree candidates; establishing evaluation mechanism for information on the basic skills, general education, and major area performance of undergraduate students; maintaining information on student strengths and weaknesses; evaluating course offerings relevant to faculty goals for students; and advising the integration of Center activities into the fabric of the institution. As staff of Center, provided faculty resources, wrote articles of ideas and information for academic departments, administrative offices, and student support services. Administrative duties included budgetary recommendations regarding implementation of programs, expediting approved expenditures, recommending purchases for holdings of faculty development Instructional Resource Library, and supervising Center personnel, including Librarian/Administrative Assistant and four work-study students. Chaired the College Testing Committee, an appointed all-college body responsible for developing and implementing all aspects of the College testing program. Convened four faculty development task forces, providing staff work to each in meeting its responsibilities and in conducting its deliberations. Served on Staff Development Initiative Steering Committee charged to provide direction to staff development program. President: Dr. Elias Blake, Jr.; Dean: Dr. Melvin R. Webb; Associates: Dr. Helaine L. Daniels, Dr. Carson Lee, Dr. Gloria Walker.

Adjunct Lecturer/Postgraduate Researcher, 1981-1983; Early Childhood Laboratory, Department of Applied Behavioral Sciences, University of California, Davis, CA 95616. As Adjunct Lecturer, major responsibility was as member of faculty in Human Development: attended faculty meetings and participated in general academic obligations of faculty; offered practicum each quarter for students participating at the Laboratory, including conducting seminars relating to issues of group care and family-school relationships in early childhood and family education programs; taught Human Development/Psychology course in social and personality development to students at

undergraduate and graduate levels; served on Early Childhood Laboratory Executive Committee, Child Development Graduate Group Colloquium Committee and on campus-wide Council for Affirmative Action Personnel Program; served as resource to Early Childhood Laboratory professional staff of graduate students and program directors. As Postgraduate Researcher, major responsibility was to establish research process and capacity at the Laboratory to serve future faculty and students; charged to conceptualize, develop funding for, implement, analyze and report research relevant to families with children six years old and under, including establishing and maintaining communications with other researchers and early childhood and family service providers, as well as with members of the general public. Also responsible for screening and coordinating requests of students and/or faculty for use of Laboratory facilities and/or clientele in research. Provided consciousness-raising and professional expertise to local school and to Davis community-at-large. Laboratory Director: Mrs. Jane N. Welker; Human Development Unit Vice Chair: Dr. Louise Bachtold.

Staff Associate, 1980-1981; Title III Strengthening Developing Institutions Program, Roxbury Community College, 625 Huntington Avenue, Boston, MA 02115. Major responsibilities included administrative, academic, direct service and fiscal training and technical assistance to all administrators, faculty, and staff of a developing educational institution. Wrote news articles and reports for general college and broad community distribution. Developed and wrote proposals for training activities. Assisted in planning development of college. Supervisors: Dr. Helaine D. Oredugba; President Kenneth W. Haskins.

Program Developer, 1979-1980; Title XX Foster Parent Training Program, Roxbury Community College, 625 Huntington Avenue, Boston, MA 02115. Major responsibility was to provide educational training to Title XX-eligible foster parents, including instruction in basic issues of child development, particularly as applicable to foster children, instruction in advanced special issues of relevance to foster care, such as abuse/neglect, discipline, working with the biological parents, etc. Adapted basic and advanced course curriculum for specific needs of local trainees. Provided training for parents seeking approval as foster care providers, including screening, consciousness-raising and instruction around key issues in foster care as well as coordination of information and participation of foster parents, home-finders and social workers. Developed workshops on various topics of relevance to foster care. Served advocate function for foster parents, facilitating coordination of services and resources, and as liaison to foster parents, agencies and community resources. Served as representative to Department of Social Service Area Board around social service concerns of the area, particularly those of foster care service. Director: Ms. Patricia Cronan; Supervisor: Dean Booker DeVaughn.

Visiting Associate Professor, 1979-1980; Afro-American Studies Program, Brown University, Providence, RI 02912. Conducted courses on urban education, systematically appraising American education and the Black experience within that context, and outlining possible alternatives for poor and minority children in urban areas. Collaborated with Providence community individuals and agencies/organizations, Brown University, Providence School System and the AAS Program to design a research study in urban education of minority children. Chairs: Professor Rhett Jones; Professor George Bass.

Consultant 1979-1981; Senior Research Associate 1977-1979; Brookline Early Education Project, The Public Schools of Brookline, Massachusetts, 490 Heath Street, Chestnut Hill, MA 02167. Major program responsibility focused on facilitating transfer of BEEP families from a preschool project to kindergarten and coordinating the interrelationships of three educational organizations. Responsible for maintaining on-going communication with the 300 project families and the school system around issues and information important for preschoolers, through compiling and editing a newsletter and publishing a Transfer to Kindergarten Manual. Major evaluation responsibility involved assessment of parents' reactions to their experience of the project's philosophy and details and evaluation of reactions of members of the school system to the project. Reported data out for dissemination to parent and school participants and for

publication to public. Served on Ethics Review Committee charged with responsibility to assist in overall evaluation of project. Director: Dr. Donald E. Pierson.

Coordinator, 1974-1976, 1970-1971; Community Research Review Committee, 317 Blue Hill Avenue, Boston, MA 02121. Coordinated the conception, design, establishment and on-going activities of a community-wide committee to screen research activities proposed for conduct in the Black community of Boston. Chairperson: Dr. Taka Salvi.

School Psychologist, 1975; Newton School System/Metropolitan Council for Educational Opportunity (METCO), Newton, MA 02160. Provided services of the school psychologist to those elementary-aged children in the Newton Public School System who were residents of Boston and who were identified as having problems in adjustment to school. Coordinator: Dr. Katherine Jones.

Consultant, 1978; 1974-1975; Reading Is Yours To Keep Program, 44 Norwood Avenue, Newton, MA 02159. Assisted in final evaluation of a demonstration reading project for children in early elementary grades. Director: Dr. Vivian Johnson.

Community Research Director, 1969-1970; Community-University Center for Inner-City Change, 90 Warren Street, Roxbury, MA 02119. Supervised six to twelve university graduate students and community trainees as researchers for community organizations; conducted training sessions in basic research techniques for trainees and students. Served as Coordinator for coalition of six community-wide groups focusing on education. Coordinated activities of community groups affiliating with the Center for training, supervision, and resources. Coordinated the conception, design and establishment of a community-wide committee to screen research activities proposed for conduct in the Black community of Boston; Associate: Dr. Murray Horwitz, Boston College; Director: Mr. Byron Rushing.

Director, 1965-1969, Diverse Mental Abilities Project; Research Associate, 1965-1969, Educational Research and Development Center, Graduate School of Education, Harvard University, Cambridge, MA 02138. Conducted research on mental abilities of children from different social class and cultural groups; coordinated building of test of mental abilities; trained test administrators; gathered test data; supervised scoring and construction, as well as application of coding form for item analysis of test; conducted evaluation of stability and validity of test. Hired, trained, supervised on-going work of 30 staff members. Associate: Dr. Gerald S. Lesser.

Research Associate, 1965; Social Dynamics Research Institute, City College, New York, NY. Participated in research on entrance procedures for the United States Foreign Service involving evaluation of objective test and oral interview procedures. Director: Dr. Kenneth B. Clark.

Research Associate, 1965; William Alanson White Institute, New York, NY. Participated in research on the therapeutic effectiveness of individualized teaching. Devised, pre-tested, administered a measure of the degree of behavioral disturbance in preschool children. Assisted in data analysis. Director: Dr. Martin Kohn.

Director of Research, 1964; Psychologist, 1964; Job Orientation in Neighborhoods (JOIN), New York, NY. Supervised collection and reporting of statistics; designed and compiled forms and established mechanisms for research program; supervised professional staff of 20 direct service providers at a local borough-wide center for high school drop-outs. Supervisor: Dr. C. R. Forster; Advisors: Dr. Isidore Chein; Mr. Allen Williams.

Lecturer, 1963; Board of Higher Education, New York, NY. Participated in research on and evaluation of Teacher Education programs of the City University of New York. Supervisor: Dr. Donald Medley.

Research Associate, 1962-1963; Hunter College, New York, NY Participated in formulation of mental abilities test and its administration; assisted in analysis of resulting data. Director: Dr. Gerald S. Lesser; Supervisors: Dr. Gordon Fifer; Dr. Donald H. Clark.

Departmental Research Fellow, 1958-1962; University of Massachusetts, Amherst, MA.

Designed, conducted, analyzed, reported research on humans and sub-humans. Supervisors: Dr. Albert E. Goss; Dr. Jerome L. Myers.

Research Assistant, Summers 1957, 1958; Meharry Medical College, Nashville, TN 37208.

Administered intelligence tests to children aged three months to five years. Director: Dr. E. Perry Crump; Supervisor: Dr. P. Mayo Gore.

EDUCATION

Ph.D. 1962, M.S. 1960, University of Massachusetts, Amherst, MA.

B.A. (*Cum Laude*) 1958, Fisk University, Nashville, TN.

Psychology major, Sociology minor for all degrees

PUBLICATIONS AND PAPERS

Fort, JG & McClellan L. The REACH-Meharry Community-Campus Partnership: Developing Culturally Competent Healthcare Providers. *J Health Care Poor Underserved*. Supplement, Spring 2006. [in review]

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Presentation as Role Model at First Annual Motivation Seminar-Workshop of Innerworld Community Alliance Networks (ICAN), Davis, CA, November, 1981.

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Fort-Morrison, J. A review of Black consciousness, identity, and achievement: A study of students in historically Black colleges. *Journal of Black Psychology*, August, 1976, Vol.III, No. 1, 112-121.

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Fort, J. G. New roles and priorities for Black professionals. Visiting Lecturer Address presented to Psychology Department, Fisk University, Nashville, TN, April, 1968.

Fort, J. G. Discrimination based on secondary reinforcement. *Child Development*, 1965, 36, 481-490. (Doctoral dissertation).

Myers, J. L., Fort, J. G., Katz, L. and Suydam, M. Supplementary reports: Differential monetary gains and losses and event probability in a two-choice situation. *Journal of Experimental Psychology*, 1963, 66, 521-522.

Myers, J. L. and Fort, J. G. A sequential analysis of gambling behavior. *Journal of General Psychology*, 1963, 69, 299-309.

Fort, J. G., Myers, J. L. and Myers, N. A. Secondary reinforcement in a discrimination problem. *Journal of General Psychology*, 1962, 66, 159-168.

Fort, J. G. Secondary reinforcement with preschool children. *Child Development*, 1961, 32, 755-764. (Master's thesis)

HONORS, AWARDS, MEMBERSHIPS

Proposal Reviewer, Centers for Disease Control and Prevention, 1993
Member, Review Panel, U.S. Office of Minority Health, 1988
Consortium of Doctors, Atlanta, GA, Honoree, 1991
Association of Black Psychologists: Award of the Year, 1975, 1970; Founder's Award, 1987
Who's Who Among Black Americans, 1985-1986, 1977-78, 1975-1976 (Morrison)
Roxbury Action Program: Award of the Year, 1974; Green Star Award, 1975
Outstanding Young Women of America, 1974, 1966
Who's Who of American Women, 1968;
Who's Who in American Colleges and Universities, 1958
Exchange Student, Whittier College, Whittier, California, 1956

Basic College Early Entrant, Ford Foundation Program, Fisk University, 1953
Association of Black Psychologists
Eastern Psychological Association
American Psychological Association
Phi Kappa Phi Honor Society
Sigma Xi Scientific Research Society
Beta Kappa Chi Scientific Society
Alpha Kappa Delta Sociological Society

CIVIC AND SOCIAL AFFILIATIONS AND ACTIVITIES

Tennessee Performing Arts Center Friends, 1996-
Gaiete de Coeur Art & Study Club, 1993-. Recording Secretary, 1995-1997; 2003-.
Board of Directors, Tallulah Humanitarian Group, Lee-Stelzer Heritage Research Museum,
Atlanta, GA, 1985-2001. Humanitarian of the Year Award, 1988-1989.
Parent Supporter, Center for International Studies, North Fulton High School, Atlanta, GA, 1985-1989.
Chapter I Advisory Council, Valley Oak Elementary School, Davis Joint Unified School District, Davis,
CA, 1981-1982
Area Board, #38, Massachusetts Department of Social Services, 1980
Institutional Review Board, Dr. Solomon Carter Fuller Mental Health Center, Boston, MA,
1978-1981
Coordinator of two-day Human Development Seminar, St. Paul A.M.E. Church, Cambridge,
MA, 1978
Ethics Review Committee, Brookline Early Education Project, Brookline, MA, 1977-1981
Board of Directors, Reading Is Yours To Keep Program, Boston, MA, 1975-1976
Board of Directors, Roxbury-North Dorchester YWCA (ASWALOS House), Boston, MA, 1974
Board of Trustees, Putnam Children's Center, Boston, MA, 1972-1974
Board of Trustees, Roxbury Multi-Service Center, Boston, MA, 1972-1974
Coordinator, Community-wide Education Conference, Boston, MA, 1970
Program Chair, Community Lecture Series (Bi-city adult cultural enrichment series), Boston,
MA, 1967-1968
General Alumni Association of Fisk University & Alumni Clubs of Fisk University
National Association for the Advancement of Colored People
Alpha Kappa Alpha Sorority

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EDUCATION

1992 **Ph.D.** specialized in *Epidemiology* and *Statistical Analysis*. Tufts University School of Nutrition Science and Policy, Massachusetts. Dissertation: *Development and evaluation of community-based intervention for alteration of hygiene practices, childhood diarrheal morbidity and growth of children in rural Bangladesh.*

1983 **Master of Professional Studies** (with distinction) *concentration in Health and Nutrition Programs*, emphasized on *Research and Evaluation Methods*. University of the Philippines at Los Banos. Research area: *Health and Nutrition Planning and Evaluation* (Micro and Macro approaches).

1979 **Master of Science** (with distinction) in *Applied Statistics*. Jahangirnagar University, Dhaka. Research: *Women's attitude towards methods of population control and utilization of family planning services in Savar, Bangladesh.*

1977 **Bachelor of Science** (with honors) major in *Statistics*; minor in *Economics and Mathematics*. Jahangirnagar University, Dhaka.

AWARDS & SCHOLARSHIPS

2004 American Association for Cancer Research & NCI's 2004 MSI Faculty Scholar in Cancer Research Award, a national level award in cancer research.

2004 *Intercultural Cancer Council Award* for conference presentation at the 9th Biennial Symposium

2003 National Medical Association, *Citation of Outstanding Reviewer for the Journal of the National Medical Association.*

2003 Nashville REACH 2010 Project Principal Investigator, *Distinguished Service Award*

2002 National Medical Association, *Citation of Outstanding Reviewer for the Journal of the National Medical Association.*

2002 American Association for Cancer Research & NCI's 2002 AACR-HBCU Faculty Scholar in Cancer Research Award, a national level award in cancer research.

2002 Tufts University, Medford, Mass. *Featured Alumni of the Year, Tufts University Alumni Association.*

2001 American Association for Cancer Research & NCI's 2001 AACR-HBCU Faculty Scholar in Cancer Research Award, a national level award in cancer research.

2001 Nominated for the *Meharry Medical College Researcher of the Year Award.*

2001 *Tennessee Volunteer Heroes 2001* award – documentation for the celebration of the United Nation’s 2001 International Year of the Volunteer, a state level honor award.

2001 Nominated for *2001 Mary Catherine Strobel Volunteer of the Year*- Middle Tennessee’s highest volunteer honor for social and community work.

1996 Toastmasters International, *Best Evaluator Award*.

1990 US Agency for International Development *Fellowship for International Health Research*.

1986 *United Nations' University Fellowship*, an international award for advance research.

1982 Netherlands Universities Foundation for International Cooperation Fellowship-*international award*.

1977 University Merit & Residential Scholarships: Jahangirnagar University, *a graduate level award*.

1974 University Residential Scholarship: Jahangirnagar University, *an undergraduate level award*.

GRANTS AWARDED

1. **Principal Investigator.** Empowering Factors among Breast Cancer Screening Compliant Underserved Populations; Grant No. DAMD17-99-1-9288, U.S. Army Medical Research, Department of Defense, October 2000– August 2005 (**Total \$303,105**).
2. **Principal Investigator.** Breast Cancer Screening in a Low-Income Managed Care Population: A Study of the Effectiveness of Intervention Strategies to Improve Cancer Screening Behaviors; Grant No. DAMD17-97-1-6277, U.S. Army Medical Research, Department of Defense, September 1997– June 2001 (**Total \$579,874**).
3. **Principal Investigator.** Cancer Prevention/Outreach Shared Resource: Epidemiology and Biostatistics Core Unit for capacity building and to develop epidemiology and biostatistical services at Meharry Medical College as a part of the Comprehensive Meharry Medical College and Vanderbilt Ingram Cancer Center; Cancer Research Partnership Grant No. NIH-NCI U54 CA91408-01; Meharry overall PI-- Dr. Adunyah, August 2001-April 2006. (**Total for this component \$739,471** of a grant total of \$9,224,919).
4. **Principal Investigator.** (With Dr. Bruce Compas as Co-PI) Mother-daughter communication about breast cancer. NIH-NCI U54 Pilot May 2004- April 2006 of **a grant of \$100,000**)
5. **Co-Principal Investigator.** Health Risk Factors and Barriers to Health Care Seeking Among Medicaid and Medicare Eligible Living in Low-Income Housing Projects; Grant No. 20-C-90841/4-01, Health Care Financing Administration (HCFA), September 1997 -December 2003 (**Total \$250,489**).
6. **Co-Principal Investigator** (with Dr. K. Zhu). Methyl-Deficient Diets and Risks of Breast Cancer among African American Women: A Case-Control Study by Methylation Status of ER Gene; Grant No. DAMD17-97-1-6277 U.S. Army Medical Research, Department of Defense, September 1997 – September 2001 (**Total \$328,228**).
7. **Investigator** to study Racial and Ethnic Approaches to Community Health 2010 Phase I: Document Racial Disparities in CVD and Diabetes among African American in North Nashville; Grant No. U50/CCU417280-02 Centers for Disease Control and Prevention (CDC), October 1999- June 2000. (**Total \$ 1,070,865**).

8. **Co-Principal Investigator.** A Comprehensive Intervention in Asthma Management in a Population of Black and Hispanic Pregnant Women and its Effects on Asthma Control, and Maternal and Perinatal Morbidity (**Total for this component \$594,921**).
9. **Investigator.** A Study of Racial and Ethnic Approaches to Community Health (REACH) 2010 Phase II: to Develop and Implement Strategies to Eliminate Racial Disparities in CVD and Diabetes among African Americans In North Nashville; Grant No.U50/CCU417280-02, Centers for Disease Control and Prevention (CDC), September 2000- September 2004 (**Total \$6,250,000**).
10. **Co-Principal Investigator.** (Dr. ZhongMao Guo, PI). Hypertension, Oxidative Stress and Race: Clinical Research Infrastructure, NIH Grant: Sept 2003-August 2007 (**Total \$472,940**)
11. **Coordinator.** Biostatistics and Epidemiology Team for Vanderbilt-Meharry Center for Aids Research (CFAR). NIHAID- National Institute of Health (**Co-PI:** Drs. Berthaud and D'Aquila).
12. **Presenter.** Grant for Travel to Annual Meeting 2004, American Association for Cancer Research. AACR & NCI (\$2000)
13. **Presenter.** Grant for participation to 9th Biennial Symposium on Minorities, the Medically Underserved & Cancer, *Intercultural Cancer Council*, 2004
14. **Presenter.** Grant for Travel to Annual Meeting 2002, *American Association for Cancer Research*. AACR & NCI (\$2000)
15. **Recipient.** Grant for Travel to Annual Meeting 2001, American Association for Cancer Research. AACR & NCI (\$2000)

TEACHING EXPERIENCE

7/02 – Present	Associate Professor (Epidemiology and Biostatistics) , Department of Internal Medicine, <i>School of Medicine, Meharry Medical College</i> , Nashville, Tennessee •Epidemiology and Biostatistics; research design, statistical and epidemiologic analysis, program evaluation. •Developing Web-based Biostatistics course •Introducing computer-based hands-on Epidemiology course •Coordinating research skills building seminar series for faculty, residents and students
8/96 – 6/02	Assistant Professor (Epidemiology and Biostatistics) , Department of Internal Medicine, <i>School of Medicine, Meharry Medical College</i> , Nashville, Tennessee <i>Epidemiology and Biostatistics</i> ; provided research design, statistical and epidemiologic analysis, and program evaluation
9/88 – 12/90	Research & Statistical Consultant , <i>Academic Computer Services, Tufts University</i> . Developed curriculum and taught research design, analysis plan, statistical and epidemiological methods and techniques
1/84 – 8/86	Assistant Professor , <i>Institute of Nutrition and Food Science, University of Dhaka</i> . Developed curriculum and taught Applied Statistics, Research Methods, Epidemiology, Health Economics, Public Health Programs, Program Planning and Evaluation.
11/79 – 1/84	Lecturer , <i>Institute of Nutrition and Food Science, University of Dhaka</i> . Taught Applied Statistics, Research Methods, Survey Research,

3/79 – 11/79 **Instructor, Civil Officers' Training Academy, Dhaka.** Developed curriculum and taught Applied Statistics and Research Methods.

RESEARCH AND ADMINISTRATIVE EXPERIENCE

7/01 - Present **Director, Epidemiology and Biostatistics Core, Meharry-Vanderbilt Cancer Alliance**
• Developed Epidemiology and Biostatistics Core Team for capacity building effort at Meharry Medical College.
• Research on cancer prevention studies, intervention and health services.
• Provide expertise to other investigators at Meharry and Vanderbilt University.
• Perform administrative and scientific leadership for the Core.

7/01 - Present **Director, Epidemiology and Biostatistics Division, Department of Internal Medicine**
• Provide Biostatistics and Epidemiologic Expertise to Departmental Researchers
• Develop epidemiological, behavioral and intervention research.
• Perform administrative and scientific leadership for the division.

8/96 – 8/03 **Director and Senior Epidemiologist, Biometry, Clinical Research Center, Meharry Medical College, Nashville, Tennessee.**
• Provide Biostatistics and Epidemiologic Expertise to CRC investigators

8/03 – present **Director, Epidemiology and Biostatistics, Clinical Research Center, Meharry Medical College, Nashville, Tennessee.** Involved in intervention/research:
• Epidemiologic expertise to clinical researchers
• Develop epidemiological, behavioral and intervention research
• Empowering factors among mammography screening compliant underserved women.
• Breast cancer screening & effective interventions in a managed care population.
• Cancer prevention in the practices of Tennessee primary care physicians.

4/95 – 6/96 **Director and Sr. Biostatistician, Research and Evaluation Unit, Epidemiology Resource Center, Indiana State Department of Health (ISDH), Indianapolis, Indiana.** Principal responsibilities included coordinating and managing research and evaluation activities, providing statistical, epidemiologic, and economic analysis, and program evaluation expertise to the ISDH programs and its affiliates (such as Indiana Hospital & Health Association, local health department; county hospitals). *Projects completed:*
• Assisted in developing a Health Promotion & Disease Prevention Program Development Guide
• Developed outcome indicators for monitoring clinical performances of health care facilities
• Produced an issue paper on the usage of appropriate statistical methods, quality assurance, and confidentiality for reporting data collected by the department
• Completed a review report on Indiana Hospital Peer Grouping Method, to evaluate its validity and applicability in the analysis of hospital discharge databases and to compare of the clinical performance outcome measures within the hospital peer groups.
• Coordinated the designing and analyzing of the Evaluation Tools for Surveillance Systems.
• Developed a Seminar in Applied Statistics, Program Evaluation & Outcome measures.
• Involved in the Coordinating Committee for Regulatory Reform that undertook and completed six major programs of analysis and evaluation for reform.
• Coordinated a critical path analysis of vital records input-output flows to improve the quantity, quality, and timeliness of the services.

- Analyzed software packages used for uniformity and improvement in efficiency & cost-effectiveness.
- Developed a template and a set computer programs for standard reports on Natality, Mortality, and Hospital Discharge databases for timely production quality reports.

9/95 – 6/96 **Member, National Committee on Health Information/Core Public Health Policy** to assess policy and programmatic needs related to managed care, health data, data systems, and the essential services of public health. Focused on outcome measures, model standards development, and public health infrastructure development.

6/94 – 4/95 **Assistant Professor (Research), Tufts University Center on Hunger, Poverty and Nutrition Policy**, Medford, Massachusetts. Involved in design studies, analyzed multidisciplinary data sets, wrote articles and reports based on health and nutrition data using Categorical data, Multiple Regressions, Discriminant and Trends Analyses.

5/92 – 6/94 **Post-doctoral Research Fellow, School of Nutrition and Policy, Tufts University**, Medford, Massachusetts. Designed research studies, analyzed multidisciplinary data sets applying advanced statistical techniques such as Logistic Regression, Factor and Survival Analyses. Wrote articles on health, morbidity, anthropometrics, diet and behavior.

1/93 – 7/93 **Researcher, Harvard University School of Public Health**. Developed analysis plan and provided technical assistance in data analysis and interpretation of results in anthropometry, morbidity and dietary, health and child care behaviors in research project entitled *Women's Health and Work and Child Survival in India*.

9/88 – 12/90 **Research & Statistical Consultant, Academic Computer Services, Tufts University**. Supported faculty members and advised graduate students in design and analysis of their research on health, nutrition, child development, and environmental health.

9/86 – 8/88 **Research Fellow, School of Nutrition Science and Policy, Tufts University**. Managed and analyzed several large and complex longitudinal databases. Wrote reports for Studies of Maternal Behaviors, Psychosocial and Environmental Factors Related to Infection and Growth of Children applying ANCOVA, MANOVA, Multivariate Regression, Logistic Regression and Survival Analyses.

7/85 – 8/86 **Deputy Project Director**, jointly conducted by *Tufts University and the University of Dhaka*. Developed, designed and implemented a community-based Health Intervention to Reduce Morbidity and to Improve Nutritional Status of Children of Bangladesh. Designed surveys and other evaluation tools, supervised multiple data collections efforts, designed information systems and managed program budget.

11/79 – 7/86 **Head, Statistics and Computer Services Division, Institute of Nutrition and Food Science, University of Dhaka**. Responsible for supervising statisticians, analysts, programmers, and other research staff. Designed, managed and analyzed several clinical trials, field research studies and interventions conducted by the Institute.

5/84 – 6/85 **Evaluation Team Leader**, Evaluated UNICEF-sponsored nationwide education program at the household level on nutrition and supplementary feeding in Bangladesh.

1/84 – 3/86 **Research and Statistical Consultant, Universities' Research Center, Dhaka**. Responsible for training research staff, designing studies, analyzing data, and writing reports.

11/82 – 3/83 **Program Development Team Leader**, a joint program of the *University of Philippines* and the Provincial Government. Developed and formulated a comprehensive village development plan for Sulpoc County, Batangas, Philippines.

3/79 – 11/79 **Research Officer, Civil Officers' Training Academy, Dhaka**. Researched on health and development. Supervised trainee civil officers in the design and analysis of their research projects.

SERVICES TO MEHARRY

- Serving as Associate Professor of Epidemiology and Biostatistics
- Serving several institutional committee activities:
 - *Strategic Planning Committee*
 - *Clinical Research Center's Advisory Committee*
 - *Medical School Admission Committee*
 - *Internal Review Curriculum Committee*
 - *Meharry-Vanderbilt Cancer Alliance Executive Committee*
 - *REACH 2010 Evaluation Committee*
- Directing Epidemiology and Biostatistics Shared Resources of Meharry-Vanderbilt Cancer Center Alliance
- Directing Cancer, Population-based Epidemiology and Behavioral Cores of Meharry-Vanderbilt Cancer Center Alliance
- Directing Epidemiology and Biostatistics Division of the Department of Internal Medicine
- Directing Biostatistics and Epidemiology Unit of the Clinical Research Center
- Coordinating Biostatistics and Epidemiology Team for the Vanderbilt-Meharry Center for AIDS Research
- Leading functions of Biostatistics Component of Meharry Medical College/Penn State University Cooperative Center for Research in Reproduction.
- Actively supporting 27 faculty researchers in their research, presentations, and publications
- Organized a successful grant writing workshop with NIH, at Meharry Medical College
- Coordinating and Teaching Biostatistics and Epidemiology Courses.
- Developing Web-based Biostatistics Course.
- Introducing Computer-based Epidemiology Courses.
- Mentoring Junior Faculty members
- Serving on thesis committees.
- Mentoring two students.
- Advising several students for their research.
- Served as Assistant Professor of Epidemiology and Biostatistics, and in several leadership roles, for approximately 5 years
- Served as Associate Professor of Epidemiology and Biostatistics, and in several leadership roles, about 2 years

SERVICES AT THE REGIONAL AND NATIONAL LEVEL

- *Session Chair, Cancer Epidemiology and Secondary Prevention*. Annual International Conference on Frontiers in Cancer Prevention Research: American Association for Cancer Research. 2004 (pending).
- *Invited Speaker*, Community Health Planning and Policy Development of the 132nd Annual Meeting. American Public Health Association, Washington, DC, November 6-10, 2004.
- *Discussion Moderator, Survivorship and Quality of Life*. Annual International Conference on Frontiers in Cancer Prevention Research: American Association for Cancer Research. 2004 (pending).

- *Keynote Speaker, Dangers of Secondhand Smoking.* World No Tobacco Day, 2001. The International Forum Dinner organized by the Collation on Smoke Free Nashville and Nashville Metro Department of Health, May 24, 2001.
- *Organizer and Chair, Health and Nutrition Issues.* Convention organized by the Federation of Bangladeshi Associations in North America, 1994.
- *Keynote Speaker, Rabindra-Nazrul Joyanti Celebration 2000.* Greater Nashville Bengali and Bangladeshi Associations. Birthday celebration of Nobel Laureate Poet Rabindranath Tagore and national poet Nazrul Islam.
- *Featured Speaker, Cardiovascular Disease and Food Pattern of the Bangladeshi Community in USA.* Bangladesh Association of New England, 1993.
- *Founder-President, Bangladesh Community of Indiana.* Organization in Indiana to support Bangladeshi community activities, which encouraged children learning programs, and addressed socio-cultural, racial and new immigrant issues.
- *Member, National Committee on Health Information/Core Public Health Policy* to assess policy and programmatic needs related to managed care, health data, data systems, and the identified essential services of public health. Outcome measures, model standards development, and public health infrastructure development are also important focus of the committee.
- *Founder, Study Circle.* Indiana group focusing on the exchange of information and understanding of community relations, religion, and spirituality in the context of global peace.
- *Member, Board of Directors, National Study Circle: Diversity In-Dialogue, Nashville Chapter.* This organization serves as a forum to deal with racial, ethnic, cultural, and religious issues and to create awareness and bring harmony in the society.
- *Member, Board of Advisors, Scarritt-Bennett Center's International Celebration of Cultures.* Each year, over 150 organizations present their cultural heritage.
- *Member, Middle Tennessee Breast and Cervical Cancer Coalition.* This coalition focuses on breast and cervical cancer problems and provides awareness in the community through health fairs, seminars, meetings and community dialogues.
- *Member, Smoke Free Nashville part of Healthy Nashville Coalition.* The group organizes seminars, meetings, presentations, and community dialogues; provides support to do research and awareness campaign.
- *Member, National Health Services Research Network* is forum for researcher of institutions nation-wide.
- *Fundraiser, The World Hunger Project, Boston, Massachusetts*
- *Member, Thesis Committee on Health Economics at Vanderbilt University.*
- *Advisor, Journal of Developing Areas*

PEER REVIEWER FOR JOURNALS

- *Social Science and Medicine*
- *Journal of Health Care for the Poor and Underserved*
- *International Quarterly of Community Health Education*
- *Journal of National Medical Association*
- *Food and Nutrition Bulletin*
- *Journal of Developing Areas*
- *Journal of Ambulatory Care Management*

PUBLICATIONS

1. Ahmed NU, Smith G, Flores AM, Pamies R, Mason HRC, Woods K, Stain S. Racial/ethnic disparity and predictors of leisure-time physical activity among U.S. men. *Ethnicity & Disease* 15 (1); January 2005 (in Press).
2. Ahmed NU, Fort JG, Elzey J, Bailey S. Empowering Factors in Repeat Mammography: Insights from the Stories of Underserved Women. *The Journal of Ambulatory Care Management:* (In press)
3. Miller ST, Mushi C, Ahmed NU, Larson C, McClellan L, Marrs M. Using focus groups to understand health related practices and perceptions of African Americans: Nashville REACH 2010 Preliminary findings. *Ethnicity and Disease:* (In press).
4. Ahmed NU, Smith G, Flores AM, Mason HRC, Grandison D, Agho AO, Stain S. Racial/ethnic disparity and predictors of leisure-time physical activity among U.S. women. *Annals of Behavioral Medicine*, 27: (Suppl) S042, 2004.
5. Ahmed NU, Ata A, Mason HRC, Stain SC, Shyr U, Stain S. Racial/ethnic differences and predictors of adherence to one or more colorectal cancer screening test guidelines in the US. *Am. Ass Cancer Research*. 45: 20-22; 2004.
6. Ahmed NU, Ahmed NS, Semenza KA, Elzey JD, Larson C, Bennett CR and Hinds JE. Prevalence and Correlates of Initiation of Smoking Behavior among Preteen Black and White Children. *JNMA*, 96: (2) 200-208; 2004.
7. Elzey JD and Ahmed NU. A Whole New Life: an illness and a healing by Reynolds Price. *JNMA*, 96: (5); 694-95; 2004
8. Flores AM, Ahmed NU, Kajese TT, Dwyer K, Murphy B. Breast cancer disparities for African American and rural women: Preliminary analyses from the SEER-12 dataset, 1973-2000. *Proc. Intercultural Cancer Council*, 19-20, 2004.
9. Grau AM, Ata A, Foster L, Ahmed NU, Stain SC, Shyr U, Reasoner D, Pearson AS. Effect of race on long-term survival of breast cancer patients. *Proc. Arch. Surgery* 2004.
10. Fortunato SJ, Menon R, Ahmed NU, Bourgeois MR, Dildy GA. Tissue remodeling Collagenases are elevated in amniotic fluids during Polyhydramnios. *J. Perinat Med*, 32: 122-125, 2004.
11. Ahmed NU, Smith G, Ata A, Flores AM, Mason HRC, Stain S. Predictors of physician recommendation for colonoscopy and sigmoidoscopy screening. *Cancer Epidemiology, Biomarkers & Prevention*, 12(11): 1312-1313s 2003.
12. Flores AM, Ahmed NU. International Trends of Cancer: A Descriptive and Comparative Study. *Cancer Epidemiology, Biomarkers & Prevention*, 12(11): 1313-1314s 2003.
13. Ahmed NU, Smith G, Ata A, Flores AM, Mason HRC, Stain S. Racial/ethnic differences in physician recommendation for endoscopic screening for colorectal cancer *Meharry-Vanderbilt Alliance Ann. Retreat Proc.* 11-12 Nov. 2003.

14. Schlundt DG, Larson C, **Ahmed NU**, Keith H, McClellan L, Marrs, M. Mapping healthy and unhealthy neighborhoods using cluster analysis and GIS: Analysis of the Nashville REACH 2010 community survey. *Proc Am Pub Health* 2003.
15. Schlundt DG, Larson C, **Ahmed NU**, Keith H, McClellan L, Marrs, M. Evaluation of capacity building and community actions for the Nashville REACH 2010 program using web technology. *Proc. Am Pub Health* 2003
16. **Ahmed NU**, Ahmed NS, Bennett CR and Hinds JE. Impact of a Drug Abuse Resistance Education (DARE) program in preventing the initiation of cigarette smoking in fifth and sixth grade students. *JNMA*, 94: 249-256, 2002.
17. Miller TS, Schlundt DG, Pichert JW, **Ahmed NU**. Shaping Environments for Reductions in Type-2 Diabetes Risk Behaviors: A Look at CVD and Cancer Interventions. *Diabetes Spectrum*, 15: (3) 176-182; 2002.
18. **Ahmed NU**, Fort JG, Schlundt DG, Belay Y, Grandison D, Pamies R. Overcoming barriers to screening mammography in an underserved population. Insights from the experience of compliant underserved women. *Era of Hope*, 1: p18-20; 2002
19. Schlundt DG, **Ahmed NU**, Mushi C, Larson C, Kinnebrew T, Wakefield V, Postell K, McClellan L. Physical Activity and Health Disparities: Results from the Nashville Reach 2010 Baseline Survey. *Annals of Behavioral Medicine*, 24 (Suppl) s152-4, 2002.
20. Schlundt DG, Mushi C, Miller TS, Larson C, **Ahmed NU**. Behavioral Correlates of Body Mass Index from the Nashville REACH 2010 Community Survey. *Proc. Am. Diabetes Assoc.* June, 2002.
21. Schlundt DG, Mushi C, Larson C, **Ahmed NU**. Nashville Reach 2010: Development and Implementation of a Web-Based System for Program Evaluation. *Annals of Behavioral Medicine*, 24 (Suppl) s215-9, 2002.
22. Miller TS, Schlundt DG, Mushi C, Larson C, **Ahmed NU**. Ethnic Differences in Diabetes Care: Results from the Nashville REACH 2010 Community Survey. *Proc. Am. Diabetes Assoc.* June, 2002.
23. Schlundt DG, Mushi C, Larson C, Kinnebrew T, Wakefield V, Postell K, McClellan L, **Ahmed NU**. The Nashville Reach 2010 Baseline Survey: Eating Behaviors and Health Disparities. *Annals of Behavioral Medicine*, 24 (Suppl) s53, 2002.
24. Schlundt DG, Mushi C, Larson C, **Ahmed NU**. A case study: Application of partnership in community based public health research. *Proc. Am Pub Health* 2002.
25. Schlundt DG, Larson C, Mushi C, **Ahmed NU**, Miller TS, Kinnebrew T, Wakefield V, Postell K, McClellan L., Mars M. Spirituality and Health in the African American Community: Focus Group and Survey Data from the Nashville REACH 2010 Project. *Proc. Am Pub Health* 2002.
26. Mushi C, Larson C, Schlundt DG, Miller TS, **Ahmed NU**, McClellan L. Mars M. Evaluating Community Based Public Health Projects: Nashville REACH 2010. *Proc. Am Pub Hlth*, 2002
27. Larson C, Mushi C, Schlundt DG, Miller TS, McClellan L, **Ahmed NU**. Validity of the SF-12 for Use Among a Low Income African American Community. *Proc. Am Pub Health*. 2002

28. **Ahmed NU**. A Community Trial to Test the Effectiveness of Intervention Strategies to Improve Mammography Screening Rates among Underserved Women. *Proc Am Assoc Cancer Resch.* 43: 820, 2002.
29. Adegoke OJ, BeLue R, Gebretsadik T, **Ahmed NU**. Breast Self Examination and Clinical Breast Examination in Metropolitan Nashville Health District. *Frontiers in Cancer Prevention Research* 1: 109, 2002.
30. **Ahmed NU**, Fort JG, Micah TH, Belay Y. How the Health Care System Can Improve Screening Mammography Rates for Underserved Women: A Closer Look at the Health Care Delivery System. *The Journal of Ambulatory Care Management* 24 (3), 17-26, 2001.
31. **Ahmed NU**, Ahmed NS, Bennett CR, Hinds JE. Factor associated with the onset of cigarette smoking behavior and its prevention strategy among pre-teenage black and white children. *Proc. Am Pub Hlth* Oct 21-25, 2001.
32. Hardy RE, **Ahmed NU**, Hargreaves KM, Semenza KA, Wu L, Belay Y, Cebrun AJ. Difficulty in Reaching Low Income Women for Screening Mammography. *Journal of Health Care for the Poor and Underserved* 11 (1): 43-55, 2000.
33. Hargreaves M, **Ahmed NU**, Hardy RE. Health Risk Factors and Barriers to Health Care Seeking in a Medicaid and Medicare Eligible Low Income Housing: Health Status and Health Risk Factors. Investigating Determinants of Health Disparities: *National Health Services Research* 29- 39, 2000.
34. **Ahmed NU**, Semenza KA, Hargreaves KM. Barriers to Access and Utilization of Mammography Screening among Low-income Underserved Managed Care Population. *Era of Hope* 2: 75-9, 2000.
35. Hargreaves M, **Ahmed NU**, Hardy RE. Key Health Risk Factors and Barriers to Health Care Seeking in a Medicaid and Medicare Eligible Low Income African American Population. *Proc. Am Pub Hlth* 15: 363, 1998.
36. Zeitlin MF, **Ahmed NU**, Beiser AS, Zeitlin JA, Super CM and Guldan GS. Developmental, Behavioral and Environmental Risk Factors for Diarrhoea among Children under Two in Rural Bangladesh. *Journal of Diarrhoeal Diseases Research* 13 (2): 99-105, 1995.
37. Zeitlin MF and **Ahmed NU**. Nutritional Correlates of Frequency and Length of Breastfeeds in Rural Bangladesh. *Early Human Development* 41: 97-110, 1995.
38. **Ahmed NU** and Zeitlin MF. *Bhat Dhara -- Catching Rice*: A Folk Milestone in Development of Bangladeshi Children: An Investigation of Parental Beliefs and Decision Making in Introducing Young Children to Family Meals. *Ecology of Food and Nutrition* 32: 227-238, 1994.
39. **Ahmed NU**, Zeitlin MF, Beiser AS, Super CM, Gershoff SN and Ahmed MA. An Assessment of the Community Impact of Hygiene Intervention on Environmental Sanitation Childhood Diarrhoea and Growth of Children in Rural Bangladesh. *Food and Nutrition Bulletin* 15 (1): 40-52, 1994.
40. **Ahmed NU** and Zeitlin MF. Assessment of the Effects of Teaching Germ Theory on Changes in Hygiene Behaviors, Cleanliness and Diarrheal Incidence in Rural Bangladesh. *Int'l Quarterly of Community Health Education* 14 (3) 283-297, 1993-94.

41. **Ahmed NU**, Zeitlin MF, Beiser AS, Super CM, and Gershoff SN. A Longitudinal Study of the Impact of Behavioural Change Intervention on Cleanliness, Diarrhoeal Morbidity and Growth in Children of Rural Bangladesh. *Social Science and Medicine* 37 (2): 159-171, 1993.
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47. **Ahmed NU**, Fort JG, Elzey J, Belay Y. Empowering Factors for Regular Mammography Screening in Underserved Populations: Pilot Survey Results in Tennessee (Submitted to *Ethnicity and Disease*)
48. Blumenthal DS, Fort JG, Semenza KA, **Ahmed NU**, Guillory JA, Schreiber GB, Perry S. Impact of a Two-City Community Intervention on African-Americans: The Meharry-Morehouse Cancer Prevention Awareness Program (*Health Education Research*; editorial revision).
49. **Ahmed NU**, Smith G, Flores AM, Agho AO, Mason HRC, Grandison D, Pamies R, Woods K, Stain S. Racial/ethnic disparity and predictors of leisure-time physical activity among U.S. women (Submitted to *Annals of Behavioral Medicine*)
50. Ata A, Menon U, Mason HRC, Stain SC, **Ahmed NU**. Racial/ethnic differences and predictors of adherence to colorectal cancer screening tests guidelines in the US. (*Submitted*).
51. Grau AM, Ata A, Foster L, **Ahmed NU**, Stain SC, Shyr U, Reasoner D, Pearson AS. Effect of race on long-term survival of breast cancer patients. (Submitted to *Archive of Surgery* 2004).
52. **Ahmed NU**, Semenza K. An Evaluation of the Interventions to Improve Breast Cancer Screening Rates Utilizing Mammography in Low-Income Hard-to-Reach Underserved Populations (*Under peer review*).
53. **Ahmed NU**, Semenza K, Belay Y, Cebrun AJ, Arthur CR. Testing the Effectiveness of Intervention Strategies to Improving Mammography Screening among Underserved Women: An Experiment with Low-Income Managed Care Population (*Submitted*).

54. **Ahmed NU**, Semenza K, Hargreaves M, Belay Y, Cebrun AJ, Arthur CR. Personal, Economic and System Barriers to Access and Utilization of Mammography Screening among Low-income Underserved Managed Care Population: A Comprehensive Analysis (*Submitted*).
55. **Ahmed NU**, Fort JG, Belay Y, Cebrun AJ, Arthur CR. Classifying Empowering and Hindering Factors of Mammography Screening Behaviors among Underserved Population (*Submitted*).
56. Addai TR, Akinboboye O, **Ahmed NU**, Okafor H, Nwokoro U, Semenza KA, et al. Accuracy of Gated Thallium 201 Perfusion SPECT for the Assessment of Left Ventricle Ejection Fraction in Women (*Submitted*).
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58. Mushi C, Larson C, Carpenter D, Catlin R, Miller TS, **Ahmed NU**, Schlundt DG, McClellan L, Mars M. Nashville REACH 2010 Smoking Cessation Program: A mixed-method approach to program planning and design (*Submitted*).
59. Adegoke OJ, BeLue R, Gebretsadik T, **Ahmed NU**. Breast Self Examination and Clinical Breast Examination in Metropolitan Nashville Health District (*Submitted*).
60. Miller TS, Mushi C, **Ahmed NU**, Larson C, Mars M. Barriers to Health Care Access, Quality Care Services, and Healthy Lifestyle in Nashville REACH 2010 Target Area (*Submitted*).

ARTICLES IN PROGRESS:

1. **Ahmed NU**, Smith G, Pamies R, Mason HRC, Grandison D, Woods K, Agho AO, Stain S. Predictors of physician advice on diet and exercise for US adult population 2000: Evidence of racial and ethnic inequity in advice? (*In preparation for submission*)
2. **Ahmed NU**, Smith G, Pamies R, Mason HRC, Grandison D, Woods K, Agho AO, Stain S. Association between physician advice and leisure-time physical activity among US adult population 2000. (*In preparation for submission*)
3. **Ahmed NU**, Smith G, Pamies R, Stain S, Montgomery. Racial and ethnic disparity and predictors of Prostate cancer screening among US men: National Health Interview Survey 2000.
4. **Ahmed NU**, Ata A, Pamies R, Stain S. Racial and ethnic disparity and predictors of colorectal cancer screening among US adults: National Health Interview Survey 2000.
5. **Ahmed NU**, Smith G, Pamies R, Grandison D, Mason HRC, Stain S, Compas B. Chronic disease and breast cancer screening in women over forty using National Data: NHIS 1987, 1992 and 2002.
6. **Ahmed NU**, Adegoke OJ, BeLue R and Gebretstadik T. Screening mammography and its correlates among health fair participants in Metro-Nashville.
7. BeLue R, **Ahmed NU**, Adegoke OJ, and Gebretstadik T. Insurance Status and Cancer Screening among Health Fair Participants in Metro-Nashville.
8. **Ahmed NU**, Fort JG. The frequency and effectiveness of physicians' recommendation on cancer screening behaviors among African Americans in the southeastern United States.
9. **Ahmed NU**, Semenza KA, Fort JG. An Impact of Positive Attitude on Cancer Screening Behaviors among African American in the Southeastern United States.
10. **Ahmed NU**, Fort JG. Where African Americans get their health care information?
11. **Ahmed NU**, Hargreaves M. Determinants of risk Behaviors among fifth and sixth graders of a Nashville School in low income communities.
12. **Ahmed NU**, Fort JG, Semenza KA. Smoking behaviors among blacks in southeastern United States.
13. Semenza KA, **Ahmed NU**, Fort JG. Utilization of health care system by African Americans in the southeastern United States.
14. Fort JG, Semenza KA, **Ahmed NU**, Guillory J, Schreiber and Perry S. Sources of cancer prevention information for African American adults.
15. **Ahmed NU**. A Trend analysis of risk factors of heart disease in Tennessee population.

MANUSCRIPTS AND REPORTS

1. **Ahmed NU.** Breast Cancer Screening in a Low-Income Managed Care Population. A Report to Department of Army: The Defense Technical Information Center's Technical Report Database, July 2001.
2. Zhu K and **Ahmed NU.** Methyl-Deficient Diets and Risks of Breast Cancer among African American Women. A Case-Control Study by Methylation Status of ER Gene. A Report to Department of Army: The Defense Technical Information Center's Technical Report Database, October 2001.
3. Hargreaves MK, **Ahmed NU**, Rutababalira A, and Jones H. A Model School Health Program for Disadvantaged African American Children. Final Report Submitted to the Tennessee Department of Health, Office of Minority Health, September 1997.
4. **Ahmed NU.** Development and Evaluation of Community-based Intervention for Alteration of Hygiene Practices, Childhood Diarrheal Morbidity and Growth of Children in Rural Bangladesh. Doctoral dissertation, School of Nutrition, Tufts University, 1992.
5. Zeitlin MF, Bonilla J, Mendrano Y, LaMontagne J and **Ahmed NU.** Positive Deviance in Nutrition Research Project, Nicaraguan Phase I Survey Report to UNICEF, New York, 1990.
6. Zeitlin MF, Super CM, Beiser AS, Guldan GS, **Ahmed NU**, Zeitlin JA, Ahmed MA and Sockalingam S. A Behavioral Study of Positive Deviance in Young Child Nutrition and Health in Rural Bangladesh. A Report to Asia and Near East Bureau, United States Agency for International Health, 1989.
7. Zeitlin MF, Guldan GS and **Ahmed NU.** Growth Patterns of Rural Bangladesh Infants. Report 6 of the Tufts-INFS-BRAC Positive Deviance Project. Report to USAID and the Office of the International Health, Washington, DC, November 1988.
8. **Ahmed NU**, Ahmed MA and Zeitlin MF. An Evaluation of The Effects of a Hygiene Intervention in Five Villages of Bangladesh. Report to USAID and the Office of the International Health, Washington, DC, October 1987.
9. **Ahmed NU** and Chowdhury MH. An Evaluation of the effect and impact of Nutrition Education and Supplementary Feeding Training Programme at the Family level in rural Bangladesh. A Report to UNICEF and the Institute of Nutrition and Food Science, University of Dhaka, 1985.
10. **Ahmed NU**, Bandahala CA, Saptorini E and Baidya AN. Formulation and Implementation of One Year Village Development Plan for Sulpoc County. Submitted to the Mayor of Tanuan, Batangas, Philippines, 1983.
11. Zeitlin MF, Guldan GS, Klevin RE and **Ahmed NU.** Sanitary Conditions of Crawling Infants in Rural Bangladeshi Infants. A Report to the USAID Asia Bureau, November 1985.
12. **Ahmed NU.** Macro Planning in Food and Nutrition: A Case Study on Market Assistance Program -- an Integrated Approach of Development of Marketing System in the Philippines, Report submitted to Institute of Human Ecology, University of the Philippines, August, 1983.
13. **Ahmed NU.** Feasibility Study on Backyard Broiler Production Project in the village of Sulpok. Submitted to the Mayor of Tanuan, Batangas, Philippines, 1983.

14. Ahmed NU. Fertilizer Consumption in Bangladesh, Its Past Trend and Future Projection, Report to the Institute of Nutrition and Food Science, University of Dhaka, 1982.
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PRESENTATIONS

1. Ahmed NU, Ata A, Insaf TZ, Mason HRC, Stain SC. What explains unequal treatment in physician recommendation of endoscopic screening for colorectal cancer? The 9th Biennial Symposium on Minorities, the Medically Underserved & Cancer in Washington, D.C. Organized by Intercultural Cancer Council. March 23-27, 2004.
2. Ahmed NU, Ata A, Mason HRC, Shyr U, Stain S. Racial/ethnic differences and predictors of adherence to one or more colorectal cancer screening test guidelines in the US. *American Association for Cancer Research, 95th Annual Meeting 2004*, Orlando, FL March 26-31, 2004.
3. Ahmed NU, Smith G, Flores AM, Mason HRC, Agho AO, Stain S. Predictors of leisure-time physical activity: Racial/ethnic disparity and among U.S. women, has been selected for oral presentation at the *Society of Behavioral Medicine's 25th Anniversary Annual Meeting and Scientific Sessions*, Baltimore, Maryland March 24-27, 2004
4. Ahmed NU, Smith G, Ata A, Flores AM, Mason HRC, Stain S. Predictors of physician recommendation for colonoscopy and sigmoidoscopy screening. Presented at the *Second Annual AACR International Conference on Frontiers in Cancer Prevention Research*, Phoenix, Arizona. October 26-30, 2003.
5. Grau AM, Ata A, Foster L, Ahmed NU, Stain SC, Shyr Y, Reasoner D, Pearson AS. Effect of race on long-term survival of breast cancer patients. Presented at the *Annual Conference of Pacific Coast Surgical Association September 2003*.
6. Flores AM, Ahmed NU International Trends of Cancer: A Descriptive and Comparative Study presented at the *Second Annual AACR International Conference on Frontiers in Cancer Prevention Research*, Phoenix, Arizona, October 26-30, 2003.
7. Schlundt DG, Larson C, Ahmed NU, Keith H. McClellen L, Marrs M. Evaluation of capacity building and community actions for the Nashville REACH 2010 program using web technology. Roundtable presentation during the *131st APHA Annual Meeting*. San Francisco, CA. November 15-19, 2003
8. Schlundt DG, Larson C, Ahmed NU, Keith H, McClellen L, Marrs M. Mapping healthy and unhealthy neighborhoods using cluster analysis and GIS: Analysis of the Nashville REACH 2010 community survey" has been selected for Oral presentation during the *131st APHA Annual Meeting*. San Francisco, CA. November 15-19, 2003.
9. Ahmed, NU. Epidemiology, Biostatistics, Prevention and Outreach in Cancer Research Progress and Prospect: a look at Meharry Vanderbilt Cancer Center Alliance; Program

Steering Committee Presentation. Meharry Medical College, Nashville, TN. December 9, 2002

10. Flores, AM and **Ahmed, NU**. International Trends in Cancer Rates: A Descriptive and Comparative Study. Meharry Medical College/Vanderbilt-Ingram Cancer Center Partnership 3rd Annual Retreat, Nashville, TN, November 2, 2002.
11. **Ahmed NU**, Fort JG, Schlundt DG, Belay Y, Grandison D, Pamies R. Overcoming barriers to screening mammography in an underserved population. Insights from the experience of compliant underserved women a presentation at the National Meeting of the Department of Defense' Breast Cancer Programs at Orange Country, Orlando, Florida September 25 - 28, 2002.
12. **Ahmed NU**. A Community Trial to Test the Effectiveness of Intervention Strategies to Improve Mammography Screening Rates among Underserved Women. American Association for Cancer Research, 93rd Annual Meeting 2002, San Francisco, CA, April 5-10, 2002.
13. **Ahmed NU**. Epidemiology and Biostatistics Core: History, Progress, and Prospect at Meharry Medical College and Vanderbilt-Ingram Cancer Center Partnership: Annual Retreat MMC/VICC Vanderbilt-Ingram Cancer Center, January 12, 2002
14. **Ahmed NU**, Ahmed NS, Bennett CR and Hinds JE. Factor associated with the onset of cigarette smoking behavior and its prevention strategy among pre-teenage black and white children. The American Public Health Association's 129th National Meeting and Exposition. Atlanta, GA, October 21-25, 2001.
15. Schlundt, DG, Pichert JW, Larson C, Miller S, **Ahmed N**, Mushi C. Ethnic Disparities in Health and Health Behaviors in Nashville: Results of the REACH 2010 Baseline Telephone Survey, Tennessee Public Health Association Annual Conference, Nashville, TN, October, 2001.
16. **Ahmed NU** and Ahmed NS. Dangers of Secondhand Smoking. World No Tobacco Day, 2001. *Keynote speaker* at the international dinner organized by the Collation on Smoke Free Nashville and Nashville Metro Department of Health, May 24, 2001.
17. Hargreaves M, **Ahmed NU**. Health Risk Factors and Barriers to Health Care Seeking in a Medicaid and Medicare Eligible Low Income Population, The National Meeting on Health Services Research organized by HCFA, New Orleans, LA, September 11-13, 2000.
18. **Ahmed NU**. Barriers to Access and Utilization of Mammography Screening among Low-income Underserved Managed Care Population. Era of Hope, Dept. of Defense Annual Breast Cancer Research Conference, June 8-12, 2000.
19. **Ahmed NU**. Behavioral and Clinical Risk Factors of Disabling Diseases, and Health Status in Underserved Housing Populations: The Annual Meeting of the Clinical Research Center, Meharry Medical College, Nashville, TN, December 15, 1999.
20. Hargreaves M, **Ahmed NU**, Hardy RE. Risk Factors in a Medicaid and Medicare Eligible Underserved Populations: The 126th National Meeting on Public Health and Managed Care by APHA, Washington, DC, November 15-18, 1998.

21. Ahmed NU. Opportunities and Challenges: Research on Changing Barriers to Health Care Seeking Behaviors in a Medicaid and Medicare Eligible Black Population, (Health for Elders in the 21st Century Conference organized by NCBA) Washington, DC, July 8-11,1998.
22. Hargreaves M, Ahmed NU, Hardy RE. Key Health Risk Factors and Barriers to Health Care Seeking in a Medicaid and Medicare Eligible Low Income African American Population, (The Third National Meeting on Health Services Research organized by HCFA) Washington, DC, February 11-13, 1998.

PROFESSIONAL MEETINGS AND WORKSHOPS

1. *Presenter*, Second Annual AACR International Conference on Frontiers in Cancer Prevention Research, Phoenix, Arizona. October 26-30, 2003.
2. *Participant*, American Association for Cancer Research, Annual Meeting 2003, Washington, DC July 11-14, 2003
3. *Participant*, NCRR GCRC Bioinformatics Conference: Bioinformatics Approaches to Neuro-imaging in Clinical Research, National Institutes of Health. Seattle, Washington, Jan. 25-27, 2002.
4. *Participant*. Interactive Workshop for Senior Faculty: Strategic Career Planning for Faculty: *Reflect, Refocus, and Renew Your Academic Career*. Meharry Medical College, Jan. 23, 2002
5. *Presenter*, The American Public Health Association's 129th National Meeting and Exposition. Atlanta, GA, October 21-25, 2001.
6. *Participant*, The 2nd Annual Meharry Pfizer Clinical Trials Workshop. The Clinical Research Center of Meharry Medical College, July 26-27, 2001.
7. *Participant*, American Association for Cancer Research, 92nd Annual Meeting 2001, New Orleans, LA, March 22-28, 2001.
8. *Participant*, NIH & GCRC Bioinformatics Conference: Human Genetics and Clinical Research New Orleans, LA, September 22-24, 2000.
9. *Presenter*, The National Meeting on Health Services Research organized by HCFA, New Orleans, LA, September 11-13, 2000.
10. *Presenter*, 2000, Era of Hope, Dept. of Defense Annual Breast Cancer Research Conference, Atlanta, GA, June 8-12, 2000.
11. *Presenter*, 1998, The Annual Meeting of the Clinical Research Center, Meharry Medical College. Nashville, TN, December 15, 1999.
12. *Presenter*, 1998, 126th National Conference of American Public Health Association: Public Health and Managed Care, Washington DC, Nov 15-18, 1998.
13. *Presenter*, 1998 National Health Symposium: Health Status of African American Elders: Implications for the Next Millennium. NCBA, Washington DC, July 8-11, 1998.
14. *Presenter*, HCFA's/HBCU Networking Conference to develop a National Health Services research network Washington DC, Feb. 11-13, 1998.

- 15.** *Participant* CDC's Partnering in Research Conference, Atlanta, GA March 3-5, 1998.
- 16.** *Participant*, Technical Assistant Program on Accessing and Utilization of the Health Care Financing Administration's Medicare/Medicaid Data, Baltimore Maryland, January 7-8, 1997.

PROFESSIONAL AFFILIATIONS

- *Member*, American Association for Cancer Research.
- *Member*, American Public Health Association.
- *Member*, National Health Services Research Network.
- *Member*, Union of Concerned Scientists: Action for Global Sustainability.
- *Member*, Board of Advisors, National Study Circle: Diversity In-Dialogue, Nashville Chapter.
- *Member*, Board of Advisors, Scarritt-Bennett Center's International Celebration of Cultures.
- *Member*, Middle Tennessee Breast Cervical Cancer Coalition.
- *Member*, Smoke Free Nashville part of Healthy Nashville Coalition.
- *Member*, National Council on International Health.
- *Member*, The Association of Teachers of Preventive Medicine.
- *Member*, American Statistical Association.
- *Member*, North America Bangladesh Statistical Association.
- *Honorary Life Member*, National Bangla Academy.
- *Life Member*, Bangladesh Statistical Association.
- *Life Member*, Bangladesh Nutrition Society.